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ILLUSTRATIONS.

Competitive Designs for the Imperial Institute :—
Design by Mr. A. W. Blomfield, M.A., F.S.A.: Front Elevation 136-137
Design by Mr. Rowand Anderson: Perspective View 140-141
Transverse Section of Design by Mr. A. W. Blomfield, M.A., F.S.A. 144-145
North-West Doorway, Orvieto Cathedral 149
West Front, Orvieto Cathedral 149

CONTENTS.

Pottery at the Burlington Fine Arts Club 125
Notes 126
Sutton Place and Loseley House 128
Congress of Municipal and Sanitary Engineers at Leicester 129
The Memorial to Alexander III. of Scotland 132
Competition Designs for the Imperial Institute 132
Orvieto Cathedral 133
Sanitary Institute of Great Britain 151
Insanitary Conditions at Margate 152
Window at St. John's, Chester 153
Goldsmith's Tomb 153
"Arcadia" at the Agricultural Hall 153
The Student's Column: Land Surveying and Levelling 122
Recent Patents 153
Recent Sales of Property 155
Meetings 155
Miscellanea 155
Prices Current of Building Materials 156

Pottery at the Burlington Fine Arts Club.

THE examples of Hispano-Moresque and of Majolica ware, now collected at the Burlington Fine Arts Club, form one of the most attractive of the loan exhibitions which have been seen there; though the interest of the first-named portion of the collection, the Hispano-Moresque ware, has been somewhat exaggerated. It is a type of work which, as representing a special development of pottery design under special influences, was no doubt worth collective illustration, but its merit in regard to design and execution is not, for the most part, of the highest order; a good deal of the work is roughly delineated and executed, and the designs based on a few rather commonplace motives, though some of them are certainly valuable as suggestions which might be further worked out. The majolica portion of the collection consists of a class of work with which most visitors will be tolerably familiar; but it is not often that there is an opportunity of studying and comparing so fine a collection of examples in one room.

The work defined as Hispano-Moresque has been supposed to be the production of Moorish potters working in Spain under Christian rule, though there seems no special reason for this conclusion beyond the negative one that it is difficult to account for its character under any other supposition as to its origin. Moresque it is in character, but later than the period of Moorish power, and its designs are mingled with Christian emblems. There is thus a vagueness and uncertainty in regard to it which gives it interest as a historical curiosity; and amid some rather coarse work of very varying degree of excellence, are some fine designs of rather unusual character.

The majority of the examples of this work in the collection, which are attributed to the fifteenth and sixteenth centuries, consist of rather large circular dishes, with broad rims, and in many cases with raised bosses in the centre. The general decoration is in most cases in conventional floral diaper of metallic lustre, and in some cases the design is raised or embossed in parts, the embossed portions being most generally the flower forms which are the salient points in the ornamental design, though in some cases mere repetition forms, mechanically repeated, are thus emphasised by partial relief. A feature recurring in a good many examples is the employment of broad lines or divisions springing tangentially from a centre boss or medallion, so as to impart a spiral character to the design. This rather obvious and well-worn device is repeated so often as to appear as a kind of recognised fashion among the producers, whoever they were, of this ware.

Among the examples possessing special characteristics are two dishes, forming a pair (2 and 3 in the catalogue), which are covered with a small diapering in gold lustre, but have large figures of a lion and a bull respectively, coarsely incised in outline on the surface, the figure occupying the entire surface of the dish as a ground, entirely irrespective of the division into sides and centre. The animals, the bull especially, are rude and clumsy in drawing, but the incident is so peculiar as to be worth attention on that ground. One of the examples that is of value, on far different grounds, is No. 5, a dish of a make of which there are only a few examples in the collection, with a deep centre and vertical sides or walls between centre and rim. The surface is entirely covered, except for a shield in the centre, with concentric circles of vine leaves and tendrils, the leaves being alternately gold lustre and blue; the general arrangement is nearly symmetrical, with variety in the details. There is no decorative sense, it is true, in making the same leaves of alternating colours; in every design where colour comes in as an element, there should be some obvious reason for distinction of colour, the one colour should be a leaf, the other a flower, or the leaves of contrasted colours should be of different outline. But, apart from this little æsthetic lapse, the effect of this dish, with its sparkling circlets of leaves, is charming, and it suggests a *motif* which might be further carried out and developed with greater elaboration. That is one use of such exhibitions as this; quite beyond the mere "collector's" interest in it is the artistic interest of noting what has been attempted in the way of decorative idea which may furnish new suggestions, and be susceptible of new and perhaps better treatment.

This concentric arrangement, which is shown with good effect in the last-named example, is found in a good many other instances carried out in a more mechanical manner and with little artistic effect; it is more like pattern-making than designing. Another peculiar form among these exhibits, not beautiful, but worth noting from its peculiarity, is that exhibited in No. 20, and in some other examples, where the prominent decorative feature consists of raised lines in relief, radiating from the central boss at equal distances, like the spokes of a wheel. It is a poor and mechanical effect, but seems to have been a fashion at one time, and is tried in two or three different ways. The "spokes" usually cross to the outside of the rim without any reference to the structural division of the dish. The reference of the decorative design to the structural form is entirely neglected in many of these Hispano-Moresque designs; in some, and those among the best otherwise, it is carefully kept in view. Thus in No. 91, a very fine example, the centre boss, the surface of the bowl, and the rim, are kept quite distinct in treatment, the surface of the bowl being ornamented with a zone of conventional floral design, leaving a space on each side of it; the rim having a gadrooned ornamental form embossed on it. This gadroon ornament is a characteristic of the school, and recurs frequently. In some cases it is made out in relief, without any special decorative outlining; in others, as in No. 80, it is treated with considerable elaboration, the gadroons being varied in detail, either singly or in groups. In No. 117 is found a design entirely differing from any other in the collection, though the plateau on which it is found obviously belongs to the same class of manufacture as the rest; this is a Japanese-like eccentricity, where the circle is divided into four quarters by strong blue lines crossing each other at right angles, and two of the opposite divisions are filled up with similar lines, all running parallel to one of the central ones, the other two divisions being filled with foliated ornament. This is so completely different from any other design in the collection, that it looks like an experiment on the part of a single free-thinking designer.

Some other special examples may be noticed. No. 22 shows a surface covered with very delicate and flowing floral ornaments in gold lustre, while over all this is painted a great *fleur-de-lis*, in dark blue, the whole width of the dish. This looks rather rampant, but it is certainly bold and effective. Nos. 31 and 34 are worth attention as fine bold designs; the latter shows a main design of two Maltese crosses interlacing, the one in a mass of gold lustre, the other in geometrical diapering in gold lustre. The description adds, "At the back, concentric circles of lines of zigzags, with an arrow-head in the centre." From the catalogue it appears that a majority of the examples have this kind of subordinate decoration at the back; and as this decoration of the back of the plate is a special feature of some interest, it is a pity that some of them were not arranged so as to show back and front, or, where the designs are in pairs, as in some cases, to show the front of one and the back of another. Nos. 44 and 47 are two other fine examples of bold work, designed more or less with reference to construction; while

No. 49 is a warning as to a radical mistake in designing conventional foliage, as the bits of foliage on the rim show growth from opposite ends of the same stem, a feature most uncomfortable to the sense of logic in design. It would have shocked Owen Jones to find any artist of his beloved Moresque School committing such a deadly sin as this. The plateau, No. 53, with little bunches of leaves in relief on the outer rim, is another unrighteous piece of work, for these little blobs of leaves have no principle of arrangement and no growth from anything else in the design, and are clumsily designed in themselves. No. 59, with some very finely-drawn conventional leafage in gold lustre, with dark blue flowers interspersed, is well worth attention. Nos. 74 and 75, hung as pendants, and evidently by the same hand, are interesting as showing a special character differing from any other examples; the surface covered with floral diapering in gold lustre and dark blue, radiating from the centre, but in thin interlacing sprays; pretty in effect, but a little weak. Nearly all the floral decoration employed is of the type so largely pervading Moresque design; that which looks as if it arose from the influence of Greek ornament on Moorish feeling and taste, and which consists of cleanly-drawn flowing stems, with small conventional leaflets growing from them at intervals. This is a beautiful form of decorative foliage when well carried out; but in a great many of the examples here it is carelessly and clumsily drawn, and, in fact, produces an impression of being the imitation of good work by inferior draughtsmen.

The majority, in fact, of these Hispano-Moresque plates seem, in comparison with the majolica collection, like the decorative efforts of children as compared with those of practised artists and draughtsmen. This latter part of the collection is of the greatest interest in more senses than one; for splendour of colour and often of draughtsmanship, and for the atmosphere of the world of Renaissance Italy, its tastes and feelings, which seems to pervade the whole. A large number of the examples, of course, contain painted figure-subjects; and though the drawing of the figure, as is the case in the majority of these majolica plate pictures, is not up to the great standard of the Renaissance, and shows especially far too strongly marked curvatures in the outlines of the limbs, still the spirit and earnestness of action, and the direct way in which the story is told, render these ware-pictures of considerable interest, even from the pictorial point of view. The best of them date during the first half of the sixteenth century. The writer of the short introduction to the catalogue, remarking that a great number of majolica examples are named and dated, says, "It thus appears that the most interesting works were produced about 1480–1525, and the most artistic about 1525–1570, and that they were chiefly produced in and around the Duchy of Urbino." He does not define, however, what he means by "interesting," nor in what sense the admittedly less artistic work is to be ranked as "more interesting" than the more artistic. This, we presume, is a piece of collector's logic; from our point of view, we confess that we find the most artistic examples the most "interesting." Among the finest designs in this portion of the collection are two remarkable works in blue and white, grisaille shaded; one (140) lent by the Queen, the other (174) lent by Mr. Drury Fortnum. The first of these is a large circular dish, with grotesques, monsters, and birds left in white on a ground of dark blue, and shaded and modelled in grisaille. The design extends all over the dish, without taking account of its shape, and the figures and scrolls are designed with that combination of boldness and refinement which is characteristic of the finest decorative work of the Renaissance. The other, No. 174, is less bold, but even finer and more finished in execution. In this case the blue, a much lighter one, is painted on, and forms the design, on a grey ground, the design being heightened with touches of white. The centre shows a figure of a mermaid with a mirror in her hand, the figure drawn with more delicacy and finish than is to be found in any other example in the collection. She is floating on water, with buildings seen on the shore in the distance. On the rim is a beautifully-designed symmetrical ornament of interlacing sprays of flowers, &c., representing the perfection of Renaissance ornament of this class. Both these two are Venetian, and 174 is said to be the earliest dated piece of Venetian ware (1540); but why on earth the catalogue should therefore jump to the conclusion that they are "perhaps by the same hand" it is impossible to understand; this is another piece of "collector's logic"; to any artist it must be manifest at a glance that they could not be by the same hand; the whole touch and style of the two is as different as possible,—as well as the colour and the method of execution; but they are both splendid pieces of work, and the former especially (140) seems full of the exuberant life of the Renaissance.

Of course, however, fine as are these blue and white examples, we generally connect the idea of rich colour, creamy yellows and deep blues, with the idea of majolica, or maiolica, ware (the catalogue adopts the latter spelling); and of the ware of this type there is a splendid collection. It is impossible to do more here than give a general idea of what is to be seen, and note a few of the most striking examples. The top and one side of the room, and the cases in the centre, are entirely occupied by examples of majolica of the richest decorative type, and many containing figure subjects of more or less spirit and interest. Among the most interesting of the pictorial ones, and also a very well designed piece in a decorative sense, is No. 167, one of a series of which several pieces are, we are told, in the Correr Museum at Venice. It has a deep centre, in which is the figure of a bull within a circle, and the wide rim is occupied by a scene from the history of Midas, who is enthroned on the right, a Cupid, bound, kneels before him, and on the left three women, two draped and one nude, come from a house, the architectural details of which, including a projecting balcony on heavy corbels, are shown with some minuteness. This is dated 1482, and is therefore one of the "more interesting," according to the catalogue preface, and here we concur; it is one of the most interesting in the room in its intensely Renaissance feeling, and also in the disposition of the figures and architecture, and one of the best executed in regard to the figures, in spite of its early date. Architectural accessories occur in a good many of the pictured scenes, but they are not of much interest in general to the architect, except as illustrating the rather odd manner in which Classic detail is modified to suit the purpose of the decorative designer, or perhaps rather to save him the trouble of drawing it correctly. Two large dishes, or rather a dish and a tazza, which both illustrate the Rape of Helen (233 and 260), are interesting, as showing a repetition of nearly the same action and position of the principal figures in the foreground (notice in both the boatman seated on the edge of the boat, with his back to the spectator, and turning to observe the contest with those on the bank); in both a palace is shown on the right, though with considerable difference of treatment. These are not among the most decorative in effect; they are interesting rather as figure-compositions. The first is by Nicola da Urbino, and the second is put down as "probably" by him, but that, we imagine, is merely a conclusion from the fact that the arrangement of the groups is similar. That is, however, eluding the very question which the comparison of the two suggests, viz., whether there was any generally accepted treatment of the subject which was adopted in its main lines by various artists, as there have been in regard to other subjects, both in Classical, Mediæval, and Renaissance periods.

Among the other objects in this fine collection which we specially noted for their decorative effectiveness are No. 189, a plate with a portrait in the centre and a fine border of dolphins and acanthus leaves, very bold in design; No. 194, a small tazza, the centre representing an open music-book, with grotesques filling up the rest of the space, a beautiful decorative effect with a special suggestion in it; No. 199, tazza, with grotesques moulded in relief and coloured grey against a dark blue background; 200, remarkable for the boldness of its border of grotesque figures; 201, the Death of Tarpeia, with architectural details of considerable interest, figures very spirited in action, and the landscape fine as far as a landscape in such a medium can be fine,—the whole with a very Titianesque glow about it; 207, plate with a sunk centre and a medallion portrait with a very fine border; 209, of somewhat similar type; 213, a medallion with coat of arms and cupids and tritons in white on a dark blue background,—this is a most brilliantly effective thing; 214, a cupid riding a dolphin in the centre, with a magnificent border of torsos and masks; 234 and 235, plateau and tazza; pilgrim bottles (239 and 241) on one of the centre cases; two large drug-pots (345 and 348) companion pieces, each with saints in medallions, and the rest of the surface covered with foliage; 256, dish with a man in Mediæval dress playing the violin, and a border of grotesques, &c., in white on a deep blue ground; 247, part of the rim decorated with a dance of cupids, a charming bit of design; 293, tazza, Aurora rising from the Sea, a bright mass of light behind her, and her horses led by the Hours; this is a curious and very spirited composition, rather reminding one of the feeling of Blake.

These are only a few to be noted as exhibiting special effects of colour and design. The whole collection deserves study on the part of those who are concerned in designing in this class of work. The periodical display of porcelain painting at Messrs. Howell & James's would improve very much in artistic value if its contributors could catch some of the decorative spirit, the feeling for rich colour and broadly-treated conventional design, which characterises so much of the majolica ware of the sixteenth century, as illustrated at the Burlington Club.

NOTES.

M. DE LESSEPS has issued his proposals for the second series of *Obligations nouvelles* for the Panama Canal. The terms are almost identical with those of the issue of last year, except that the *Obligations*, which are re-imbursable at 1,000 francs each in forty-eight years, are issued at 440 francs, instead of 450 francs. The subscription will be opened, at Paris and at New York, on July 26th, and closed on the same day. The notice is accompanied by a letter from M. de Lesseps, in which he states that more than half the sum realised by the emission of 1886 is in the coffers of the company, and that, "if the 100 millions of francs which we have *en caisse* are a great source of quiet and of force to us, this quiet and this force will be simply tripled by a balance raised to 300 millions." "What is necessary," he adds, "is that with the 600 millions realised, all measures should be taken that the ships may pass from one ocean to the other." Desirable as this object is, it is not quite evident how the proposed issue will tend to effect it. If 8,000,000*l.* are received by the company, on the terms proposed, this whole sum will be required for paying interest and sinking fund (in the form of repaying 6,000 *Obligations* per year) for between ten and eleven years, without laying out a single centime on the works of the canal, and the net result of the operation will be to leave the company burdened with a debt of 16,000,000*l.*, in respect of the loan, after that amount of interest and of sinking fund has been paid. The figures come out very simply and clearly on paper. The puzzle is,—what is the object of borrowing money on such terms?

AT the Kensington Petty Sessions, on Wednesday last, the 20th inst., a case of some importance as regards railway companies was decided. The Vestry of Hammersmith applied for an order on the London and North-Western

Railway Company to demolish a building erected on the north side of North Pole-road, Wood-lane, Hammersmith, adjoining the Wormwood Scrubbs Railway Station, used as a booking-office, which building was alleged by the Vestry to be in advance of the general line of buildings on the north side of North Pole-road, and had been certified to be so by the Superintending Architect to the Metropolitan Board of Works. Mr. Besley appeared for the Vestry, and the railway company was represented by the assistant solicitor to the company. The facts of the case were not disputed, but the company relied upon a decision of Vice-Chancellor Wood in the case of the London and Blackwall Railway Company *v.* the Board of Works for the Limehouse District (Law Journal's Reports, vol. 26, p. 164, 1856-7), in which a bill was filed to restrain the defendants from demolishing certain buildings for the purpose of a new station and railway over Commercial-road, Limehouse. In the course of his judgment, the Vice-Chancellor remarked:—"I think it quite plain, upon the construction of an Act of Parliament of this special character, that, whenever the Legislature has enacted that certain powers of a special character shall be vested in a corporate body or any body of commissioners for the express purpose of carrying out a special object which the Legislature has in view, no subsequent Act, giving in merely general terms powers which, by their generality, apply to the powers of the special character given by the first Act, will override the special powers so delegated to the particular body of commissioners or corporation." The Bench considered that they were bound by the decision of Vice-Chancellor Wood, and decided the case in favour of the railway company. It has already been decided that a railway company is exempt from the Metropolitan Building Act with regard to the construction of all buildings erected by them even in the heart of the City, and at a distance from their railway, if such buildings can be colourably shown to be for the use of their undertaking; and the effect of recent decisions seems to be that it is competent for a railway company to erect a wooden building in Pall-mall or Cheapside, and to place it in front of the adjoining buildings, without anybody being able to object.

WE regret to see that Mr. Butterfield repeats in the *Times* his extraordinary proposition to remove the front row of columns of the portico of St. Martin's Church, to provide against a more imaginary than genuine obstruction of traffic. Mr. Butterfield states that the parish possesses a model of the church with a portico of only one range of columns, which he concludes "must have been made" under the direction of Gibbs. This, however, is only a possibility, or at best a probability; and supposing the model was made under Gibbs's direction, that would only prove that he was dissatisfied with the shallow porch and improved upon it afterwards. Seeing what a number of blockheads there are who are always ready to pull about a fine building for the sake of "practical" advantage, we cannot but regret that Mr. Butterfield should have been led to give his support as an eminent architect to such a proposition, which we should not scruple to characterise as a wanton act of destruction. Mr. Ralph Nevill's letter on the same subject is much more to the point. He says:—

"The only pinch is at the corner of the National Gallery.

All that is required is to take down the flight of steps leading to the disused door of the former residence of the keeper of the Gallery, and to carry the pavement over the useless area adjoining. The railings to the front area would start from the corner of the building.

By this means a 40-ft. road would be obtained at very small expense, and without damage to any architectural feature of either building."

This is a common-sense proposition, the more so as it is probable that the front of the National Gallery will be rebuilt sooner or later in a manner more worthy of its position and contents; and therefore even some slight disfigurement to it could only be a temporary evil, instead of a permanent spoliation, as in the case of St. Martin's. We must protest most strongly against what we must call Mr. Butterfield's extraordinary and most ill-advised proposition.

PROPOSALS are before the shareholders for amalgamating the East and West India (London and Tilbury) and St. Katharine's Docks Companies. The East India Docks, at Blackwall, having a water area of thirty acres, were opened on August 4th, 1808, for the Honourable East India Company. They have since passed to the West India Dock Company, whose basins were opened on August 27th, 1802, the first stone having been laid by William Pitt on July 12th, 1800. William Jessop was the engineer; his plans cover nearly 300 acres, including the canal across the Isle of Dogs. Hardwick constructed the St. Katharine's Docks, next eastwards of the Tower, from the designs of Telford, at a cost of 1,700,000*l.* As many as 2,500 navvies were employed for a period of fifteen months, 1827-8, in digging out the ground. Most of the excavated earth was carried up the river to Millbank, and thence utilised for filling in the Chelsea Water Works reservoirs, near to the now Victoria Railway Station, in pursuance of Cubitt's building operations at Pimlico. The space taken by the Dock Company included a densely-crowded area of twenty-four acres south of Upper East Smithfield, lying between Little Tower-hill (*olim* Fosse-side) and Burr-street, King's Distillery, and Nightingale-lane. Within these limits were situated a vast number of streets, courts, and alleys, together with Hangman's, or Hanson's, Gains; the Flemish Church and its graveyard; a Whitehall, St. Katharine's-square, and the original dock; together with the church, cloisters, Sisters' Close, the master's house and orchard, the Brethren's and Sisters' almshouses and the burying-ground of the hospital, which had been founded by Queen Maud, 1148, and reconstituted by Queen Eleanor. The hospital church, with its appurtenant buildings, stood where are now the inner lock gates and the entrance basin. Western Dock covers the site of the Flemish church and churchyard, whilst Hangman's or Hamsden's Gains lay where are some of the Company's buildings that have lately been demolished for an approach to the new Tower Bridge. In 1824 the hospital site was disposed of to the Dock Company for a sum assessed by Lord Eldon at 125,000*l.*, in addition to which grants were allowed of 36,000*l.* for new premises, 2,000*l.* for new site, and so on. The old church, as is recorded in a letter to the editor of "The Every Day Book," vol. i., col. 1405, was finally closed on October 30, 1825; and by 1828 Ambrose Poynter's new hospital was erected in the Regent's Park. Hither were removed, at an expense of 1,000*l.* the tomb of John Holland, Duke of Exeter; and the carved wooden pulpit given by Sir Julius Cæsar whom Queen Elizabeth, *pleno jure*, appointed Master in 1596. From the earliest times nearly all the nominations to a share in this charity, about 6,000*l.* a year, are in the absolute gift of the queen consort or dowager, and, failing them, of the sovereign. This privilege saved from spoliation at the Dissolution one of the most ancient ecclesiastical endowments in England. Hollar made some drawings of the earlier buildings, and in the Soane Museum may be seen a plan of the property as it existed in 1781.

MESSRS. DOULTON have just made, and are exhibiting, a terra-cotta and Doulton-ware reredos, font, and pulpit, for the Prince and Princess of Wales. The furniture is destined for the English Church of St. Alban, at Copenhagen, and was designed by Mr. A. W. Blomfield, M.A., the architect of the church. The reredos consists of a large and two small panels within trefoil-headed arches, supported on small Doulton-ware columns, and surmounted by gablet-formed hoods; the whole is enclosed between small buttresses, and stands above a super-altar, in the back of which are three oblong panels, filled with Doulton-ware. The large panels, representing the Ascension, and, at the sides, the Betrayal and the Unbelief of Thomas, are from the hand of Mr. Tinworth, and are none the worse for having a little more repose and less of the robust naturalism than some of the works of that original and vigorous artist. The font is octagonal, and stands on an octagonal centre shaft and eight columns of plain blue Doulton ware. The angles of the basin are marked by little Doulton-ware shafts, and the side panels are alternately figure-subjects by Mr. Tinworth, and ornamental devices. The pulpit is ordinary in character, with open traceried sides, and stands on Doulton-ware columns. That the design and detail of these works are refined and scholarly, and the execution nearly perfect, is what one expects, seeing who have been concerned in the matter: and we are not disappointed; but, as critics must have their growl, we may ask, perhaps, whether the forms of mouldings and conventional foliage that suggested themselves to a thirteenth-century carver of obdurate stone are likely to be the most appropriate for the use of a nineteenth-century modeller in a plastic material?

THE escape of St. Bride's Church from the thunderstorm of Friday afternoon last week reminds us that on two previous occasions its spire has been struck by lightning. As originally built by Wren,—1701-3,—it rose to a height of 234 ft. The spire, unprovided with a conductor, had been so greatly damaged by a stroke of lightning on June 18, 1764, that it was found to be necessary to take down 85 ft. of the fabric. Franklin's experiments had been made ten or twelve years before. In repairing the injury, Sir William Staines lowered the spire by 8 ft.: the portion removed was for a long while preserved in a mason's yard in Old-street-road, St. Luke's. The cost of making good the damage done in that year amounted to 3,000*l.* In 1803 this beautiful steeple was again struck by lightning, but with injury less serious than on the previous occasion. Last week the lightning passed down the conductor into the ground, though not without causing considerable alarm by the violence of its current, manifest in the wreck and *débris* at the steeple's base.

VISITORS to Edinburgh who from the Dean Bridge have looked down upon the gorge through which flows the Water of Leith may have noticed upon a ledge of rock by the side of the stream a circular Grecian temple. There are comparatively few, however, who descend to inspect the structure, which covers a mineral spring, and is known as St. Bernard's Well. For some years past this structure and its surroundings have not met with proper attention, and been allowed to fall into a dilapidated state. Through the munificence of Mr. William Nelson, publisher, this state of matters has been remedied, the temple has been restored, and the domed chamber decorated in mosaic and ultramarine and gold. A new statue of Hygeia is to be placed under the open canopy. A handsome new entrance and flight of steps has been placed at the Stockbridge end of the ground, and an elegant parapet erected along the margin of the stream. There are few more picturesque spots than this to be found in or about Edinburgh.

FURTHER up the Water of Leith another improvement has been effected at Belford, on the old Queensferry road. The bridge which crossed the stream at this point having shown symptoms of decay, and having been found too narrow for the increasing traffic caused by the extension of the city, a new bridge, with improved access, was resolved upon. The new bridge, designed by Messrs. Blyth & Cunningham, civil engineers, now completed, is on a higher level than its predecessor, the approaches from the east and west having been raised to a corresponding degree; and an entirely new access has been formed from the north end of Palmerston-place, thus forming a direct outlet from this quarter to the north-west. The situation is one which suggests picturesque

treatment, and it is to be regretted that the aid of an architect was not called in to impart somewhat of an artistic feeling to the structure; for anything more unmeaning and commonplace than the battlemented coping, albeit composed of granite, it would be difficult to find, and the treatment of the approaches is such as one may see at railway bridges in the country, but hardly expects within a city.

A CORRESPONDENT of the *Field*, "H. E. L.," under the heading, "Horses in London Streets," objects strongly, in the interest of the horses, to the use of wood and asphalte pavings on slopes: they ought only to be used, he urges, on level streets, and where there is light traffic, not where heavy two-horsed vehicles, such as omnibus and carts, are the rule. From the point of view of the horses we have no doubt he is right. The noise from London traffic, increasing almost year by year, has, however, been such a serious evil to the human beings who have been compelled to carry on their avocations in the midst of it, that some change from paving and macadam seemed inevitable. We have no doubt the constant uproar of the City streets in old days tended to shorten life; only the toughest nerves could remain unaffected by it. Now the horses suffer instead, unhappily. The ideal pavement, which should equally suit the comfort of man and horse, has not yet been found; who will find it?

THE memorial to Rossetti, of which we gave an illustration some time ago, was unveiled on the Chelsea Embankment on Thursday, last week, by Mr. Holman Hunt, before a small concourse of persons, chiefly relatives and friends of the late artist. As our readers may remember, the monument consists of a drinking-fountain, designed by Mr. Seddon, with a quarter-length figure of the poet, modelled by Mr. Madox Brown. This should have been a head and bust merely, with a conventionally-designed pedestal; the head and upper portion of the body, cut short off for no apparent reason except that there is no room for more of it in the space allotted, has an exceedingly bad effect. It is neither one thing nor the other, neither a bust nor a figure, and produces a somewhat ludicrous impression. Mr. Holman Hunt delivered an address in regard to the genius of Rossetti, in which he formed an estimate of him which we do not think future generations will ratify, and to single out Rossetti's mannered piece of archaic prettiness, "The Annunciation," in the National Gallery, as remarkable for "vitality of expression" and as superior to the Ansidei Madonna in "artistic discrimination of form," was, at all events, a proof that Mr. Hunt has the courage of his opinions.

IN the summer of 1885 the Council of the Royal Scottish Academy supplemented their annual winter exhibition by one devoted to works in water colours by living artists. The financial results were not satisfactory, and the existence last year of the International Exhibition was a sufficient reason why the experiment should not be repeated that summer. Under the same auspices a similar exhibition was opened on the 13th instant, but it is not, as in the previous instance, confined to the works of living artists, but contains examples of lately deceased painters. The works exhibited are 852 in number, and besides water colours embrace examples of black and white, and of the product of the sculptor. Amongst the names of deceased artists who are represented on the walls are those of Turner, David Cox, Landseer, G. P. Chalmers, and George Mason.

IT appears that the Leeds Architectural Society sent a memorial to the Leeds School Board some time since asking that the designing of schools might be taken out of the hands of any special architect, and left open to the profession generally. The Board eventually gave a qualified consent, in the form of an inquiry from members of the architectural profession as to the terms on which they would undertake such work, and it appears that certain architects who are named offered to carry out the work at 3½ per cent., 3½ per cent., and 4 per cent. respectively, and that some of these "cheap" architects have accordingly been commissioned to erect schools for the Board. One of these is an architect of considerable repute and large practice. The work to be done includes, it should be observed, more than an architect is usually expected to do for the ordinary fee of five per cent.; it embraces the survey of sites, the taking of levels, the furnishing of sketch-plans, and the preparation of quantities. Architecture, of course, is not bound up with the sacred ritual of five per cent.; but we do not think the architects who have thus responded to an inquiry, the literal meaning of which was "who will do the work cheapest?" have acted in a way calculated to raise either their own dignity or that of the profession to which they belong.

SUTTON PLACE AND LOSELEY HOUSE.

ON Saturday last the Architectural Association visited two of the most interesting houses in Surrey,—Sutton Place and Loseley House, near Guildford. They have neither of them changed hands since they were built, but have been handed down either by direct descent or by will to their present owners. In Sutton Place mass has been said without a break for 350 years. They have both always been occupied, and have undergone a certain amount of alteration and curtailment, but not enough to destroy the very important evidence they afford with regard to the domestic architecture of the sixteenth century; that is, of the Early Renaissance. Sutton Place was built first, and was the first to be visited on Saturday, under the guidance of Mr. C. Forster Hayward, F.S.A., who has made careful measured drawings of the whole house, which, it may be hoped, will some day be published. Mr. Hayward's researches, together with those of Mr. Frederic Harrison, whose mother now occupies the house, ought to suffice to clear up its history, and to throw a considerable amount of light on a very interesting period of house-building. Mr. Harrison has already collected a good deal of information, which was published in the "Collections of the Surrey Archæological Society" (vol. ix., part 1, 1885).

Sutton Place was built by a Sir Richard Weston about the year 1525, and is remarkable for three special reasons; firstly, that it was one of the earliest unfortified houses in England; secondly, that all its ornamentation is in moulded terra-cotta; and thirdly, that here may very distinctly be seen the commencement of the change from Gothic to Classic, exhibited in a manner almost unique, and depending largely for its significance upon the material employed. First, as to plan. The house was originally built round a quadrangle, 80 ft. square or thereabouts, which was entered beneath a large tower, opposite to which, on the other side of the Court, was the Hall. There was also a second court attached to one of the wings, but this was quite subordinate and devoid of fine architectural treatment. The large courtyard was the centre of interest, and was arranged with a symmetry almost rigid, and to which convenience of planning had to bend. This arrangement was of very frequent occurrence in houses of the period, though, as Mr. Harrison claims, Sutton Place is probably the earliest example of it. When the tide of house building had fully set in during the last half of the century, numerous examples of a perfectly symmetrical court with the hall on the side opposite to the entrance may be found; but about Sutton Place is this curious feature, that apparently the door to the hall opened direct into that apartment instead of into the "screens," which invariably divided the hall from the buttery and kitchen. The rooms arranged round this quadrangle numbered nearly forty, and are all mentioned by name in an inventory of the furniture and effects of the builder, Sir Richard Weston. Mr. Harrison remarks that the house "was planned with all the apartments required by modern habits," but it must not be forgotten that these apartments were arranged for the most part in a highly inconvenient manner, and though the material required by modern habits is here, its disposition by no means accords with modern ideas. In those days the larger number of rooms were thoroughfare rooms, and many of the bedrooms or "lodgings" opened direct into the court, across which open space was the only means of access to them.

The present house consists of three sides of the original quadrangle, the fourth, or entrance front, in which was the large tower, having been taken down in 1782. The return of this front on the two remaining sides may still be seen, and Mr. Hayward exhibited on Saturday a conjectural restoration, for all the features of which he had found some authority.

The plan, therefore, of Sutton Place is its first point of interest: it shows the absence of fortification; the introduction of many rooms with modern designations, but ill arranged, except as producing an imposing symmetry; and the subsequent destruction of one whole side as being, in fact, superfluous and an unnecessary expense to maintain.

But, perhaps, more interesting than the plan are the general appearance and details of the structure. The general appearance, as may be seen from Nash's Mansions (plate 43), is that of a Tudor or Late Perpendicular house, with windows having cusped heads, with flat-pointed doors, and with a panelled parapet; but a closer inspection reveals the fact that all the mouldings of jambs, mullions, transomes, and strings are adorned with raised ornaments of Italian character, and that all the dressings are of terra-cotta. Probably, in this use of terra-cotta is to be found the key to the singularly early introduction of the essentially Italian ornamentation, which is not confined to the strings and mullions, but appears over the front door and elsewhere in the shape of amorini in panels divided by half-balusters and a raised floral pattern. The impression conveyed by the meagre and ineffective treatment of these panels over the front door, by the unworkmanlike way in which the string cuts into the middle of a moulded panel on the canted sides of the bays, and by the patched appearance of the parapet, is that here were English workmen using a material to which they were unused, which had to be designed and moulded and made before it came to its place in the work, and which could not be humoured to meet an emergency in design as stone could. No worker in stone would have let his string butt right up against the middle of a carved panel. But with this terra-cotta what could you do? No special mould was supplied for such an emergency, and so a bungle it was, and a bungle it had to remain. It may be that difficulties of this kind prevented the use of terra-cotta from spreading, for we find it hardly anywhere else in any quantity except at Layer Marney, in Essex, which was finished before Sutton Place was begun. These two buildings, indeed, are abnormal. Though so early in date they have much Italian detail, and all in terra-cotta. Most of the contemporary buildings were of stone and still quite Gothic in treatment. May it not be inferred from this that the moulds from which the terra-cotta details were made were supplied from foreign sources? that, the English workmen not taking kindly to the new material, it fell into disuse? and that only after the lapse of some decades and by a gradual process, did Classic detail become the general language of the English workman? The reason of the employment of so much Classic detail here may be found in the fact of Sir Richard Weston having spent much of his time abroad in the service of Henry VIII., to whom he was closely attached.

But the ornamentation at Sutton Place is not all of foreign inspiration. The "tun" which so frequently appears as half a rebus on Weston, has its counterpart in many English buildings of the preceding fifty years, while the grapes that adorn the small end of the quoins may equally have been derived from English sources; but undoubtedly most of the designs, especially the amorini and those in the window mouldings, must have come direct from abroad. It is interesting to note how the various moulds have been used, how by combination they are made to produce different designs, and how frequently they have been reused, and yet how, in spite of his ingenuity, the builder was hampered by his material, and unable to do all he would have done had he been working in stone.

These, then, seem to us the lessons to be drawn from an inspection of the workmanship. That we have here the result of the owner's travels abroad; that he procured the coveted Renaissance detail from foreign sources and

by using moulds made possibly abroad, but utilised at home by English workmen, because he knew that no Englishman working in stone could have given him what he wanted; and that the difficulties inseparable from the use of ready-made detail prevented the material in which it was made from being brought into general use. Had the application of terra-cotta been more successful no doubt the English Renaissance would have been hurried on, but as the Italian forms had to win their way in stone, the process was longer, and not fully accomplished for fifty years or more, and by that time doors, windows, and mouldings, as well as carved ornament, partook of the Classic spirit. But, however that may be, Sutton Place must always be remarkable as a building Gothic in all its detail, except what would be (were it of stone) its carved ornament.

Not less interesting than Sutton Place is Loseley House, where the members of the excursion were hospitably entertained, and were conducted over the house by the owner, Mr. Molyneux, who knows and loves every stone of the building, and who explained all the points of interest. There is not much detail outside; and the inside has been considerably pulled about at various times, so that few of the features are in their original places, but this matters little with Mr. Molyneux as a guide. Perhaps the most important thing in regard to Loseley is that a plan of it is to be found in John Thorpe's book (fol. 39–40), with the title, "Sir Geo. Moore's house." (It is a remarkable thing how little distance one can go in the study of the English Renaissance without coming across John Thorpe.) The date of the commencement of the building is fixed by the original building accounts which are preserved among the numerous and highly interesting Loseley MSS., from which it appears that the original house was begun by Sir William More in 1561, and finished in 1569, and cost 1,660*l.* 19s. 7d. Every item of expenditure is set forth at large, and at the end is written:—"Sm[a] totalis of all mye buldynge from 1561 untyll Mychylmas, 1569. Mvj[c]lx.li., xix. s., vij.d." There must have been an earlier house than this one, built by Sir William; for at Christmas, 1558, one Edward Tyle writes to him from Windsor:—"I ham very glad to here of yo[r] renysh wyne, I praye yo[u] kepe yt well, for I trust my p'te [part] ys therin"; but of this earlier house which held the excellent Rhenish, no traces remain. In the new house which Sir William built, the family lived till the beginning of the seventeenth century, in the first year of which he died. His son, Sir George, succeeded him, and desiring to be in the fashion, and to be as magnificently housed as his friends, he called in the assistance of John Thorpe to enlarge the building. It is Thorpe's plan for the enlargement that is given in his book under the title "Sir Geo. Moore's house." The plan shows the original house,—which can to this day be identified, window for window, and room for room, though the internal arrangements are slightly different,—and the new wing on the west side. It also shows, partly in pencil, a suggested wing on the east side, and a screen-wall from wing to wing, with a gateway tower in the middle, thus completing a quadrangle about 200 ft. wide by 130 ft. long. Had these suggestions ever been carried out, the house would have been one of the most imposing in the country; even as it was, the old house and the new wing made a large place, so large, indeed, that some sixty years ago the new wing was pulled down as being too great a burden to maintain. In Manning & Bray's "History of Surrey" a view of Loseley is given, which corresponds in all but a few unimportant particulars with Thorpe's plan, showing that the new wing was carried out as shown thereon. The house, therefore, has reverted to its original size, save for an eighteenth-century projection on the south side, containing a staircase and study, and for a small new wing built by the present owner; and it still deserves Camden's description as the "delicate seat of the knightly family of the Mores." Thorpe has, rather curiously, omitted to show the small porch at the south end of the "screens," which must have been part of the original structure, as it bears the date 1568, the only date to be found.

The chief apartment, of course, is the hall, but the drawing-room, called by Thorpe the parlour, has more original work left, and the ceiling, cornice, and chimney-piece are fine examples of the period. They are figured in Nash's "Mansions." In the cornice occurs the rebus of the Mores,—a mulberry tree with an inscription on either side, *Morus tarde moriens; Morum cito moriturum*,* as who should say, the tree itself lives long, but the fruit dies quickly. There were formerly many of these inscriptions, only one of which is now left, and that over the front door: it is a Latin hexameter:—

"Invidiæ claudor pateo sed semper amico."

The sentiment is the same as in the pithy saying over the door of Montacute, "And yours, my friends." The others are given in the "History of Surrey," and were curious for their aptness to the rooms to which they were assigned. Over the kitchen door was, "For hunger, not gluttony"; over the buttery, "For thirst, not drunkenness"; and over the parlour, "For the upright, not the wicked." But these are gone, and no remains are left. There are, however, in various panels of the hall and in a small bedroom upstairs, some very beautifully painted panels, which from their character and design and from the date of the panelling which surrounds them, justify the belief that they came from the palace of Nonesuch, which was destroyed early in the eighteenth century, when they probably were brought to Loseley and worked into the panelling then being put up. These painted panels are of singular delicacy, and are conceived entirely in the spirit of the Italian Renaissance, much more so even than the work at Sutton Place which we have been discussing.

The "delicate seat" of Loseley is a difficult place to leave; there is so much to be explored, the views are so fine both back and front; the old garden with its long high terrace and quaint garden-houses at the corners, is so fascinating that it is hard to leave it for the prosaic work-a-day world. But the return must be made, and it is at least a satisfaction to feel as we go away how wide a glimpse into history the two houses of Sutton and Loseley have given.

* The Mulberry (tree) is slow to die. The Mulberry (fruit) shall quickly die.

CONGRESS OF MUNICIPAL AND SANITARY ENGINEERS AT LEICESTER.

LEICESTER is a growing and rapidly-improving town, and very important and in some respects unique public works are now in progress there, from the plans and under the superintendence of Mr. Joseph Gordon, the Borough Surveyor, who, before he came to Leicester, several years ago, had become favourably known as the engineer of several important sanitary works on the Continent, Frankfort and other large towns in Germany having been completely sewered and drained by him. The Association of Municipal and Sanitary Engineers and Surveyors have this year elected Mr. Gordon their President, and the fourteenth annual meeting of the Association was held in the Council Chamber of the Town-hall, Leicester, last week. The Association, we may here say, was established in 1873 (its founder being Mr. Lewis Angell, now Borough Engineer of West Ham), and it has been steadily growing ever since its commencement. At the time of writing it has 11 honorary members (including the chief municipal engineers of London, Paris, Brussels, and Amsterdam), 304 ordinary members, and 9 graduates, making a total of 324. Of the importance of such a society, and of the value to the public of the free interchange of opinions and experiences between gentlemen holding the important positions of engineers and surveyors to municipalities, local boards, and other public authorities, there can be no question, and we are therefore very pleased to notice the growth and increased usefulness of the Association.

Mr. R. Vawser, M. Inst. C.E., of Manchester, presided temporarily at the opening meeting on Thursday morning, and amongst the members present were:—Mr. Thomas Hewson (Leeds), Mr. H. U. McKie (Carlisle), Mr. A. M. Fowler (Manchester), Mr. H. P. Boulnois (Portsmouth), Mr. J. Gammage (Dudley), Mr. E. G. Mawbey (York), Mr. T. W. Stainthorpe (Eston), Mr. J. Howcroft (Redcar), Mr. J. Haigh (Abergavenny), Mr. C. G. Lawson (Southgate), Mr. G. Eedes Eachus (Edmonton), Mr. John Price (Toxteth Park), Mr. G. B. Laffan (Bridgewater), Mr. T. Farrell (Sherborne), Mr. R. Pickering (Whitehaven), Mr. F. Newman (Ryde, I.W.), Mr. W. H. White (Oxford), Mr. C. Jones (Ealing), Mr. Jos. Lobley (Hanley), Mr. S. S. Platt (Rochdale), Mr. F. Ashmead (Bristol), Mr. John Parker (Hereford), Mr. J. Cartwright (Bury), Mr. A. W. Parry (Reading), Mr. T. de Courcy Meade (Hornsey), Mr. John T. Eayrs (West Bromwich), Mr. J. W. Cockrill (Great Yarmouth), Mr. Sidney G. Gamble (Grantham), Mr. Thos. Coulthurst (Derby), Mr. Alfred T. Davis (Stratford-on-Avon), Mr. J. W. Walshaw (Peterborough), Mr. Robert Godfrey (King's Norton), Mr. H. J. Clarson (Tamworth), Mr. E. R. Window (Bishop's Stortford), Mr. Geo. R. Strachan (Chelsea), Mr. F. J. C. May (Maidstone), Mr. G. R. Andrews (Bournemouth), Mr. W. H. Savage (East Ham), Mr. W. H. Leete (Luton), Mr. G. E. Shore (Crewe), Mr. Geo. Hodson (Loughborough), Mr. T. Gledhill (Heckmondwike), Mr. Jas. Lemon (Southampton), Mr. W. Dent (Nelson), Mr. W. Banks (Rochester), Mr. E. B. Ellice Clarke (London), Mr. J. Buchan (Grimsby), Mr. A. Creer (Lancaster), Mr. J. W. Wardle (Longton), Lieut.-Col. Jones, V.C. (Wrexham), Mr. S. Dyer (Bridlington), Mr. W. Stewart (Rugby), Mr. A. Comber (Kidderminster), Mr. S. F. Rolley (Tipton), Mr. C. J. Dawson (Barking), Mr. J. D. Watson (Arbroath), Mr. C. H. Lowe (Hampstead), Mr. W. G. Laws (Newcastle-on-Tyne); and Mr. Thomas Cole, Secretary.

The visitors included Sir Robert Rawlinson, K.C.B.; Major Tulloch, one of the Local Government Board Inspectors; Alderman Hart, Mayor of Leicester; Alderman Chambers, J.P.; Alderman Kempson, J.P.; Councillor Goddard, Chairman of the Highways Committee; Dr. H. Tomkins, Medical Officer of Health for the Borough; Mr. William Eassie (London), Mr. R. W. Peregrine Birch (London), Mr. Walter Jennings (London), Mr. J. S. Hodgson (Rotherham), and other gentlemen.

Mr. Vawser having explained that he presided temporarily, owing to the retiring President, Mr. Lobley, being detained on his journey from Hanley,

The Mayor, on behalf of the Corporation, gave the Association a very cordial welcome to Leicester.

Mr. Vawser, on behalf of the meeting, thanked the Mayor, and then resigned the Presidential chair to Mr. Lobley, of Hanley, who had now arrived: he had been unexpectedly delayed at Uttoxeter. The minutes of the last annual meeting were passed, and

The Secretary then read the fourteenth annual report, which expressed the pleasure with which the Council were able to record that all the statistics in the account of the proceedings of the past year showed a larger increase of numbers than in any previous year, as well as a satisfactory advance in the financial position of the Association, while there was evidence that the examinations which it had instituted were being received with confidence by the public. Since the last annual meeting, held at Hanley on July 8, 1886, and two following days, district meetings had been held at Rochester, Walthamstow, West Hartlepool, Warrington, Portsmouth, Kidderminster, and Bolton. During the past year 44 new members, consisting of 39 ordinary members and 5 Graduates, had joined the Association. Death, resignation, and other causes had removed 14 members. The Council recorded with regret the deaths of Mr. William Whittington, Borough Surveyor of Neath (Glamorganshire), and of Mr. John Green Hall, City Surveyor, Canterbury. The extension of the rules made at the last general meeting, so as to admit the metropolitan surveyors to membership, was being appreciated, inasmuch as up to the present time more than a quarter of their number had been enrolled as members. A similarly satisfactory result had also to be recorded with regard to another new rule made at the last general meeting, by which certificated candidates were admitted as Graduates of the Association. Up to the present time, thirty per cent. of the candidates who had successfully passed the Association's examinations had joined as Graduates. The audited balance-sheet showed a balance in hand on the 30th of April of 298*l.* 6s. Two examinations had been held during the year.* The Sanitary Institute of Great Britain, jointly with the Parkes Museum, having petitioned her Majesty for the grant of a Royal Charter of Incorporation, under the name of "The Sanitary Institute," the Council, on behalf of the Association, petitioned against the granting of such Charter, or, at all events, against including in such Charter the power of granting certificates to local surveyors. Up

* The results of these will be found recorded in the *Builder* for Oct. 23, 1886, and May 14, 1887.

to the present time no decision had been arrived at by the Privy Council. The Parliamentary Committee of the Council of the Association had held many sittings during the year, and had given careful attention to "The Sanitary Registration of Buildings Bill" and "The Sanitation of Houses (Metropolis) Bill." The draft of the first-named measure had been considerably modified, and the second measure was withdrawn at an early stage of its existence. In conclusion, the report dealt with proposed alterations of the rules, &c. The ballot lists having been duly issued, the scrutineers reported the following gentlemen elected for the Council:—

President.—Mr. J. Gordon.

Vice-Presidents.—Messrs. H. P. Boulnois, C. Dunscombe, and E. B. Ellice Clarke.

Ordinary Members of Council.—Messrs. A. Brown, J. Cartwright, T. Coulthurst, J. H. Cox, J. T. Eayrs, A. M. Fowler, T. Hewson, H. U. McKie, T. de C. Meade, A. W. Parry, R. Read, and T. Walker.

Honorary Treasurer.—Mr. Lewis Angell.

Honorary Secretary.—Mr. C. Jones.

The report was adopted, on the motion of the President, seconded by Mr. Vawser, and the following telegram was despatched to Her Majesty the Queen:—

"The Association of Municipal and Sanitary Engineers, assembled at their annual meeting now being held at Leicester, desire to offer their congratulations to your Most Gracious Majesty on the completion of the fiftieth year of your reign, and they pray that your Majesty may long be spared to continue your happy reign over your loyal and contented subjects.—J. GORDON, President."

In the course of the sitting the following reply was received:—

"The Queen has received with much pleasure the congratulations of the members of your Association.—PONSONBY."

A proposal to alter the title of the Association to that of "The Association of Municipal Engineers," introduced by Mr. T. De Courcy Meade (Hornsey), was first considered. He urged that the old title was cumbersome, and he thought that the suggested abbreviated title would express all that was necessary, and be much more convenient.

Mr. Godfrey (King's Norton) seconded the proposition.

Mr. C. Jones (Ealing) moved, as an amendment, that the title should be, "The Association of Municipal Engineers and Surveyors." He held that the title should express as nearly as possible the character of the Association, and he thought the one he proposed would do this better than the title Mr. Meade suggested.

Mr. W. H. White (Oxford) seconded the amendment, chiefly on the ground that the term "Surveyor" was that by which they were designated in the Act of Parliament.

Mr. Hewson (Leeds) said he thought that the argument employed by Mr. White was inconclusive. What did not the term "Surveyor" embrace? The title was used by all sorts of unqualified persons.

Mr. Fowler (Manchester) said that there was equal ambiguity as to what was embraced in the term "Engineer."

Sir Robert Rawlinson said he happened to know that the Government were going to take action with regard to setting out new districts, which would alter the constitution of the local government of the country very materially. He suggested that the question of the alteration of the title of the Association should stand over until it was seen what effect the Government Bill would have on the local government of the country.

Mr. Meade (Hornsey) withdrew his motion, conditionally that Mr. Jones withdrew his amendment. Mr. Jones acceded to this, and the question of alteration in the name of the Association accordingly stands over until next year.

The District Secretaries were reappointed until the next meetings of the various districts, as follows, viz.:—Home Counties, Mr. O. C. Robson, Willesden; Midlands, Mr. A. T. Davis, Stratford-on-Avon; Yorkshire, Mr. J. W. Horsfield, Batley; Lancashire and Cheshire, Mr. S. S. Platt, Rochdale; Western, Mr. Jos. Hall, Torquay; Northern, Mr. P. W. Thomson, Willington Quay; Eastern, Mr. E. Buckham, Ipswich; and Wales, Mr. J. W. M. Smith, Wrexham.

Mr. Lowe (Hampstead), Mr. Price (Toxteth Park), Mr. Eayrs (West Bromwich), and Mr. De Courcy Meade (Hornsey), were appointed scrutineers to conduct the ballot for the election of the next Council; and Mr. Godfrey (King's Norton), and Mr. Strachan (Chelsea), were chosen as auditors.

On the motion of Mr. C. Jones (Ealing), seconded by Mr. White (Oxford), a cordial vote of thanks was passed to the retiring President, Mr. Lobley, for the exemplary manner in which he had discharged his duties, and for the services he had rendered to the Association.

Mr. Lobley expressed his thanks, and observed that his interest in the Association would be rather augmented than lessened by his having passed the chair.

The President's Address.

Mr. Joseph Gordon, M.Inst.C.E., the Borough Engineer of Leicester, as President elect, then took the chair, and delivered his inaugural address. After thanking the members for his election to the chair of the Association, he said that the original object for which the Association was established had been fully maintained in the present aim and usefulness of its operations. The diffusion of knowledge on the subjects coming within the range of municipal engineering in all its varied phases, differing, as they must necessarily do, in different parts of the kingdom, amongst the members by the papers read and discussed at the various district meetings during the year, coupled with the advantage of an opportunity for an inspection of the works to which the papers referred, in the various towns, was a distinct and very material advancement upon the very limited opportunities which the municipal engineer had, prior to the establishment of this Association, for gaining a knowledge of what was being done elsewhere than in his own town, in the solution of those problems which municipalities and Local Boards had to deal with to meet the growing wants of their districts, and for the improvement of the sanitary condition of their respective localities. It was to the distinct advantage of the corporations and Local Boards that their Surveyors and Engineers should belong to the Association, and take as active a part in its work as possible, for he thought he might venture to say on behalf of every member who was in the habit of attending the District Meetings, no matter how experienced he might be, that he had in every instance learned something of advantage, whether it had been some better way of carrying out some particular class of work or some minor detail, or something had been brought under his notice which it was desirable to avoid in any similar works. Very few of the members were able to attend all the meetings held in different parts of the country during the year, and it must not be forgotten that it was at considerable expense on the part of those members who did so, and that consequently the full advantages of the Association would not be realised until the municipal authorities and Local Boards became impressed with the benefits which would accrue to the towns represented, by knowing that their surveyor attended all such meetings, so as to keep himself abreast of the times in his knowledge of the actual works of the country of a municipal character. That, he was afraid, would never be practicable unless the local authorities themselves came to the rescue, as they heard at their Oxford Meeting in 1883 several boroughs and Local Boards had already done (as regarded the annual meeting, at any rate), by paying the expenses of the members attending those meetings. The good effects and results of the Association by bringing its members into contact with each other at the various meetings were, he was quite sure, being felt in all those towns and districts whose surveyors were members of it. After alluding to the annual volume of "Proceedings of the Association," the President said:—

A step in the right direction was taken by our Society two years ago in the establishment of Examinations for the office of local Surveyors. The success attending the inauguration of that step has been most satisfactory indeed, and deservedly so, I think, when it is considered that in addition to the many other duties the Members of the Council have to perform, they are also chosen as an Examining Board, and that a section of them devote two days of their time twice a year to these examinations without any remuneration.

It had long been felt that there was an examining body for certificates of competency for local surveyors which fully met the requirements of the case. The Royal Institute of British Architects have for some years held examinations and granted certificates of competency for District Surveyors practising in London, and the Metropolitan Board make it a condition that all candidates for such offices should hold such a certificate. This is, no doubt, as it should be in principle, but the question arises whether the Institute of British Architects is the most fitting body to hold examinations for provincial Surveyors, whose duties are scarcely identical with those of metropolitan Surveyors working under different Acts of Parliament.

The Sanitary Institute of Great Britain instituted also, some years ago, examinations for local Surveyors and Inspectors of Nuisances, conducted by a Board of Examiners composed of gentlemen eminent in sanitary science. It has been felt, however, that a certificate emanating from a body composed of gentlemen filling the most important surveyorships in the kingdom, daily and hourly occupied in the practical work which all surveyors to local authorities have to encounter, would be of great practical value, and recommend itself to local authorities.

There is one other body whose certificate would have all the force and weight of authority, not only in this kingdom but throughout the British Dominions, if that institution would undertake the task,—I mean the Institution of Civil Engineers,—because that body includes within its ranks not only the greatest living authorities on all engineering subjects, but also the chief City and Borough Engineers and Surveyors to Local Boards of the United Kingdom.

It might be urged that as many of the duties of the local Surveyor are of an architectural character, that element would not receive sufficient attention by a body of engineering examiners. On the other hand, while many local surveyors are drawn from the architectural profession, and have been entrusted with important architectural works, yet it will be conceded that the great bulk of their duties are of an engineering character, and that therefore the engineering element is paramount. An engineering body of examiners would appear to be, therefore, a more fitting body to examine and certify as to the competency of candidates for local Surveyors than a Board selected from a purely architectural institution, although perhaps both elements should be present on such a Board.

If the Institution of Civil Engineers were to undertake the task, I think it is fair to presume that with so practical a body of men they would largely select their examiners from that very class of men who have the most complete knowledge of the subject.

What, then, so natural as that this Association should undertake the task until a Board of Examiners has been established, either by the Institution of Civil Engineers, or by the joint action of all the institutions affected and interested, in which all could have confidence? That the Association was right is shown by the fact that the number of candidates who have presented themselves at the three examinations which have been held is much larger at each examination than has appeared before the Examining Boards of other institutions to which I have referred, and I think the Association is to be congratulated on the inauguration of this new step, and that we owe a deep debt of gratitude to those members who took such an active interest in its establishment, and also to those active members of the Board of Examiners who have, at great sacrifice of their time, presided so efficiently over the examinations which have already been held.

A perseverance in this work cannot but be productive of good to the community at large, and I am even sanguine that Local Authorities may eventually follow in the footsteps of the Metropolitan Board of Works, and admit only candidates possessing the certificate of competency of this Association.

The President next proceeded to review the sanitary progress which has been made during the reign of Queen Victoria. In the course of his remarks under this head, he said:—

The average mortality for England and Wales was 22·4 in 1838, and in 1886 19·3, which shows a saving on last year's population of England and Wales of 86,400 lives annually, and a saving in suffering from an estimated number of about 1,728,000 cases of sickness.

To accomplish all this vast sums of money have been expended, probably not always wisely, inasmuch as there have been mistakes made in this direction, as in all new developments of science when applied in practice, and evils have

arisen which, if foreseen at all at the outset, were underrated.

The great object of the Public Health Act, 1848, was to enable Local Authorities, by its adoption, to properly sewer, drain, and cleanse their towns, and to provide efficient supplies of water, free from contamination and impurities dangerous to health. The raising of money by loans repayable in a series of years, which the Act empowered, enabled all these objects to be accomplished, and whilst the first duty of Local Authorities was undoubtedly the provision of a good supply of water and proper sewerage for the removal of liquid filth from the immediate vicinity of inhabited dwellings, the carrying out of proper works for the latter object has been of much slower growth than the former. Private companies led the way, in fact, in providing supplies of water, inasmuch as there was a prospect of the works becoming remunerative to shareholders investing their money in them, and in nearly every instance where Local Authorities have eventually found it to be in the interest of the inhabitants of their districts to purchase the works, they have had to pay high prices for the undertaking. This has generally led to a great deal of dissatisfaction with companies holding such works, but it must not be forgotten that the companies would, in most instances, never have had any existence if the Local Authorities had taken the initiative, and that but for the companies this great boon of a pure supply of water would most probably have been long delayed to many large as well as small communities.

The evils which have arisen from the sewering and draining of towns, have been of a twofold character. Firstly, in the increased pollution of rivers and streams into which the sewage, in the earlier stages of these works, was poured without any previous treatment; and, secondly, in the production of sewer gas, which, up to the present moment, seems so difficult to deal with. These concomitant evils and difficulties attending the execution of sanitary works are in no way to be underrated, but it still remains the first duty of town authorities to remove, as quickly as possible, all liquid and other refuse from the midst and immediate vicinity of large populations, before putrefaction has had time to take place. There are some minds whose course of reasoning seems to lead them to the conclusion that the evils attending the introduction of modern systems of sewerage are greater than those of the old methods of dealing with town sewage and refuse, but the facts are against them to such an extent that it would be difficult to point to a responsible medical officer in the kingdom who would be courageous enough to advocate a return to the old *régime* of cesspools, privy ashpits, open ditches, and flat-bottomed culverts. The introduction of earth-closets as one of the safeguards against sewer-gas has made no headway for large populations, and is beset with practical difficulties. In the Midland and Lancashire towns the system known as the pail or tub system has been much more largely introduced as a substitute for the water-closet, and it has, from a landlord's point of view, many attractions. In the first place, the first cost, as compared with that of a water-closet, is very small, and the landlord is relieved for ever afterwards, I believe, in most towns, of all future costs and maintenance; whereas, in the case of water-closets there is undoubtedly great difficulty, in cottage property, in keeping them in good working order, especially during the frosts of winter. There are, however, many objections to the pail-system, which it is not proposed to touch upon in this address beyond this, that it appears to be a costly appendage to the water-carriage system, without the expected corresponding advantage of relieving the municipal authorities of any of the difficulties of river pollution, inasmuch as the remaining liquid refuse of the town has still to be dealt with by the modern systems of precipitation or irrigation, at practically the same cost as would have been the case, if the water-carriage system had been adopted in its entirety.

The Rivers Pollution Act gave an impetus to works for the treatment of sewage, although much had been done prior to that, and Leicester was one of those towns which led the way so early as 1854, in precipitating the solids of the sewage before allowing it to enter the river. The innumerable methods which have since then been tried, and, after large expenditures of money, have proved to be failures, show the difficulties of the question. On the whole, however, sewage-farms, or a combination of the chemical system with irrigation or intermittent filtration, have been the most successful, so that the first evil to which the cleansing of towns, viz., the increased pollution of rivers, gave rise, may now be said to be capable of satisfactory solution, notwithstanding that the old battle of the systems of precipitation *versus* application of sewage to land still wages whenever opportunity occurs.

The second evil to which I have made reference, viz., that of sewer ventilation, seems still unsolved, and I would earnestly entreat members, all of whom have, more or less, opportunities of experimenting and making observations of the behaviour of sewer gas under certain conditions, to direct their attention to this subject. It is admitted on all hands that the sewers must be ventilated,—that is, that there must be a means of escape for the polluted air of the sewers, for it is well known that the conditions prevailing within the sewers during the twenty-four hours of the day are very varying, and on this subject the early observations of the late Medical Officer for the City of London (Dr. Letheby), and the present Engineer for the City of London (Lieut.-Colonel Haywood), and the still more recent investigations of Professor Pettenkofer, of Munich, Professor Soyka, of Prague, and our own members, Mr. McKie, of Carlisle, Mr. Read, of Gloucester, and others, are well worthy of attention. It does not, however, seem to be so readily or universally conceded that a plentiful supply of fresh air is of equal importance, and that the great aim and object of sewer ventilation should be the introduction of atmospheric air for the purpose of diluting and oxidising the air of the sewers, and the creation of a current to some exit, which shall, if possible, either be above the roofs of the houses, or still better, to some point where the sewer gas can be cremated. The most recent contribution to this subject, in direct opposition to these views, is to be found in the address of Professor Attfield to the Hertfordshire Natural History Society and Field Club, in which it is laid down that all that is necessary is a vent at an elevation above the ground, and that, therefore, the surface ventilators or other openings for the introduction of fresh air are not only not necessary, but are, on the contrary, injurious, even when acting as down-cast shafts.

These aims and objects are beset with difficulties, and the most scientific minds of the country have failed so far to devise a method of ventilation, which shall at the same time be within the range of practical application as regards cost, and universally satisfactory.

The report of last year of a Committee of the Metropolitan Board of Works is worth attention, as showing the opinion of the metropolitan Surveyors. Out of the forty districts the opinions of whose surveyors were taken, thirty-five were in favour of open ventilation, two were doubtful, two against, and one had no experience in this matter. The average distances of the ventilators were from 30 to 200 yards, and the Committee came to the conclusion "that pipe ventilators of large section can be used with great advantage in addition to, and not in substitution for, surface ventilators."

To supplement the street openings as much as possible with vertical cast iron or other shafts up the house sides would seem to be the first thing to do, for there can be no doubt that the more this is done the more perfect will be the ventilation of the sewers. It must also not be forgotten that the anxiety of late years of English sanitarians to protect each house from the possible dangers of sewer gas from the street sewer has led to a system of so-called disconnexion of the house drains by a water seal or syphon trap, and that consequently the soil-pipes of the houses, which, when carried through the roofs acted as ventilators to the public sewers, have been lost for this purpose, and thus the difficulty of sewer ventilation has been greatly increased.

In Leicester we have been fortunate enough to secure the co-operation of factory owners, who have allowed us to connect no fewer than fifty-two chimneys, whilst we have already carried out, at a cost of about 1,250*l.*, 146 special shafts up the house sides, with a locked opening upon a large number of them, by means of which we can test the velocity of the current as well as the temperature of the outflowing air. The connexions with the high factory chimneys are all of too small a calibre to be of great use, being generally only 6 in., with a few exceptionally of 9 in. diameter.

The radius of effect of specially-erected chimneys, as shown by the experiments of Sir Joseph Bazalgette, and as experienced with the special ventilating towers erected at Frankfort, is disappointing and discouraging when the cost is taken into consideration. It cannot be expected, however, that manufacturers will admit larger connexions to be made with their chimneys, otherwise, of course, much more satisfactory results would be obtained. To fall back upon special shafts up the house sides means, in my opinion, that there should be probably as many in number as are represented by the soil-pipes of the houses, for in this we have a tested example at Frankfort, which, so far as I know, has up to the present moment proved eminently satisfactory. The distance apart of such shafts would largely depend on the size of them, but as a rule it will be found that house owners object to large pipes, in which case the number must be increased, and if we take a distance of about 30 yards, we should require about 5,000 such shafts in Leicester.

Whether some artificial means of inducing currents in sewers by drawing down fresh air from shafts above the eaves of the houses, and sending forth the diluted sewer gas to still higher levels, or burning it in an outcast shaft, will take the place of natural ventilation, and prove to be less costly and more certain in its action, remains to be seen; but it is quite certain that notwithstanding the patents which have already been taken out and failed, and those now before the public, there is still a wide field of research before this question is satisfactorily solved, so that no cause whatever shall remain of complaint on the part of the most fastidious.*

One other important question common to all towns is that of the collection and disposal of the ashes and refuse of the households. It is one which is becoming daily more difficult to deal with, especially in those large communities where the old privy and ashpit system has not been entirely abolished. The removal of such ashes is at all times a source of nuisance, and if they cannot be disposed of to the agriculturists of the district they become a source of difficulty. In purely water-closeted towns the so-called dry ashpits cannot be kept in such a condition as to be entirely free from nuisance, especially in the summer months, inasmuch as the refuse of vegetable and animal matter finds its way into them, and they are, in close and inhabited districts, necessarily too close to the living apartments of the dwellings; the tendency therefore now is rather to discourage the establishment of ashpits by the substitution of ashbins, to be collected daily or weekly as the case may be, and I think there can be no doubt that, from a sanitary point of view, this is by far the best system, harmonising as it does with the general principle applicable to town sanitation of removing all refuse likely by decomposition to become dangerous to health, as quickly as possible from the precincts of human habitations. The difficulty of disposing of the ashes, mixed as they must necessarily be with animal and vegetable matter, is one that is forcing itself upon the attention of all town authorities, and the days of the rich dust contractors of the Metropolis are practically numbered.

Destruction by fire seems to be the ultimate end to be aimed at, and in this respect several towns have led the way, but as this is a subject which will be fully dealt with by a paper to be read during the meeting, I will not anticipate the information which will be brought before you, further than to say that the great end to be aimed at in this method of disposing of the ashes and refuse of towns is greater economy in cost of construction of destructors, as well as in the cost of working them.

The progress in sanitation on the Continent, America, and the Colonies has not been coincident with the progress in England, but these countries have largely benefited by the experience of the United Kingdom, and in some respects their specialists take more extreme views than those of this country in matters of

* On this subject, we may mention that in the course of the proceedings at Leicester, Sir Robert Rawlinson intimated his intention to place at the disposal of the Council of the Association the sum of 10*l.* 10*s.*, to enable them to appoint a person in whom they had confidence to work out all the present information on "Sewer Ventilation." It was intimated on behalf of the Council that this generous offer would be further supplemented by them.

detail. This is, perhaps, more particularly the case with the Americans, who have devised all sorts of exceptional details in connexion with private drainage, in order to protect the interior of the houses from sewer gas, and to perfect its ventilation.

In plumbing matters they seem also to be very advanced, and to have established examinations for plumbers, and far-reaching regulations for house drainage. Time will not permit me to examine into the works of a sanitary character which have been undertaken in the several countries after the example of England, but they have been attended with similar beneficial results and saving in life and sickness as in this country, although the Continental towns which have led the way with such works cannot as yet point to the low rates of mortality for large towns which have attained in England, with the exception of the German towns of Carlsruhe, Frankfort, Wiesbaden, and Stuttgart, which show death-rates of 20·55, 20·64, 22·00, and 21·40 respectively. The greatest reduction of the mortality by the execution of proper sewerage and water works took place in Danzig on the Baltic, and Linz on the Danube, where, after the execution of the works, the mortality was reduced by 7·85 and 10·17 per thousand respectively, and in the case of Danzig this reduction is almost exclusively in zymotic diseases.

Berlin is also a remarkable example of the enterprise of German sanitarians, for there they are demonstrating to the world the practicability of dealing with the sewage from a population of over 1¼ millions upon 16,000 acres of land, of which about 10,000 acres are already under irrigation.

In conclusion, the President alluded to the important public works now in progress and in contemplation at Leicester, including flood prevention and sewerage works of a very difficult and costly character. A notice of these is necessarily deferred till next week.

Sir Robert Rawlinson, in proposing a vote of thanks to the President for his address, said he had known Mr. Gordon ever since he was nineteen years of age, and had been proud to continue his acquaintance ever since. He had the highest opinion of him as an engineer, and hoped he would live long enough to have his eminent abilities recognised by the country.

Mr. Jones (Ealing) seconded the proposition, which was carried by acclamation, and the President briefly acknowledged the compliment, and said he hoped that at the termination of his period of office he should still retain their esteem.

Subsequently a paper was read by Mr. G. R. Strachan (Chelsea), on "Concrete, Cement, and Asphalte Footways,"* and after some discussion the meeting adjourned, and the members visited the old Townhall, the Roman pavement, the public baths, and two or three of the local manufactories.

In the evening the annual dinner took place at the Masonic Hall, Halford-street.

The Memorial to Alexander III. of Scotland.—The memorial erected at Kinghorn, in memory of Alexander III. of Scotland, was unveiled by the Earl of Elgin on the 19th inst. The memorial, which has been erected at a cost of some 300*l.* takes the form of a shaft over 11 ft. in height, slightly tapered, square on plan, each face being about 21 in. broad. Upon each angle is a roll moulding, with capitals and bases. On the front of the pedestal is a slightly-recessed panel, on which is the following inscription:—"To the illustrious Alexander III., the last of Scotland's Celtic Kings, who was accidentally killed near this spot, March 19, 1286. Erected on the sexcentenary of his death." The front panel shows a *bas relief* in bronze by Mr. John Rhind, sculptor, representing King Alexander surrounded by his courtiers, hearing the pleadings of some of the peasantry during one of the Circuit Court assemblies, which are said to have been a special feature of Alexander's reign. A cross terminates the whole at an altitude of 28 ft. above the rock base upon which the memorial is founded. The entire structure is of Peterhead granite, from designs by Mr. Hippolyte J. Blanc, architect, Edinburgh.

* Of this and of the other papers read before the Congress we will give some report in our next, together with an account of the visits to the important flood-prevention works now in progress in Leicester, to the Groby and Mount Sorrel granite quarries, the Victoria Stone Works at Groby, the Leicester Waterworks at Bradgate, the Leicester Gasworks, &c., &c.

Illustrations.

COMPETITION DESIGNS FOR THE IMPERIAL INSTITUTE.

We give this week the principal elevation, section, and plan of Mr. Blomfield's design for the Imperial Institute. The following extracts from the report sent in with the design will serve to explain the objects kept in view in working out this design:—

"In the instructions issued to the competing architects, the only part of the specified building, or group of buildings, which appears capable of having a monumental character imparted to it, without in some measure detracting from its convenience or utility, is the entrance-hall. In the accompanying design this hall has, therefore, been treated, both externally and internally, as the central dominating feature of the whole composition. In order to give it as much prominence as possible, it has been kept to a certain extent detached from the main building on each side, and rises straight from the ground, with nothing in front of it but an open portico.

In plan an octagon of 70 ft. clear internal diameter, surmounted by a dome rising far above all neighbouring buildings, it would in itself form a monument not unworthily recording the occasion of its erection.

The main building faces south. The entrance-hall is in the centre, and communicates directly with every department; it is approached under a spacious *porte-cochère* by a carriage drive from the new road, and has doorways of ample width, so contrived that the whole may slide back on special occasions, leaving a clear opening of 20 ft. in width. On entering the hall, the first and most prominent object that meets the eye is an enthroned statue of the Queen and Empress, and right and left are statues of the Prince Consort and the Prince of Wales. Passing straight on, the reception-hall is approached by a lofty corridor which carries on the architecture of the entrance, and is lighted from above.

A great reception-hall, except on State occasions, is commonly a useless and somewhat dreary place; an attempt has been made to avoid anything of the kind in the case of the present hall. As will be seen, it is brought into close communication with the Exhibition Courts by means of corridors on each flank, these corridors having on one side numerous doors leading into the reception-hall, and on the other arcaded openings commanding the Exhibition Galleries 9 ft. below. These galleries would be approached by staircases at intervals.

The hall might thus, when not required for meetings, be used for temporary exhibitions, or merely as a '*Salle des pas perdus.*' Ample storage is provided in the basement below for seats or any other movable fittings.

Returning to the entrance, the Secretary's offices will be found close at hand in the right wing, and beyond these the various conference-halls and committee-rooms, refreshment-rooms, &c.

At the extreme west end are the Emigration Offices, communicating with the main building, but having a separate entrance. The upper part of this wing is occupied by the smaller committee-rooms, refreshment and smoking rooms, and by the kitchen and domestic offices, which are completely shut off, and are provided with a separate service staircase and ample lift accommodation. Rooms for stores and cellarage are placed in the basement of this wing, in immediate connexion with the lift and service stairs, and with the serving-rooms attached to the refreshment-rooms.

On the left of the entrance-hall will be found, first, the post and telegraph offices and telephone room, and then the Mercantile Reading-room and Intelligence Offices close to the postal department on one side and the library on the other. On entering the library from this end, the Sub-Librarian's room is found close to the door on the right, and opposite to it the Librarian's room.

At the other end of the wing are placed the general reading-room and students' reading-room, with a separate entrance.

The whole of the upper part of this wing is devoted to the storage of books or to work connected with the library. In the basement, beside book-rooms, a large receiving and unpacking rooms, and heating-chamber, provision is made for porters' rooms, police-room, and a fireman's room.

This completes the main building, which may be termed the administrative portion of the Institute. The remainder is entirely distinct, and is divided into two exactly equal and symmetrical sections, each of which consists of suites of galleries for permanent exhibitions or museums so arranged as to enclose a quadrangle of 220 ft. square, entirely occupied at a lower level by galleries principally of iron and glass for temporary exhibitions.

Although no requirement of this kind is hinted at in the instructions, it is quite clear that, if large exhibitions are to be held in these courts from time to time, a considerable number of comfortable and roomy offices will be required in immediate connexion with them, and entirely distinct and separate from the administrative department of the Institute itself; such offices have therefore been provided in a convenient, easily accessible, and central position at the north end of the great reception-hall.

The question of style appears to be almost settled by the character of the immediately surrounding buildings, and even by the *genius loci*, with which any style other than some phase of the Renaissance would be palpably incongruous. Great freedom of treatment should nevertheless be permitted and even encouraged in a building of this kind, and in such a position. A period at which the picturesque character of northern Mediæval architecture had not yet entirely disappeared under the chilling influence of rigid Classical rules and formulæ seems, therefore, to be indicated as the best source of inspiration.

The principal materials proposed to be used are red brick and stone. Terra-cotta, attractive as it is for some reasons, has inherent defects which make it unsuitable for a building of this character, in which stone of some kind is much to be preferred. Portland stone would naturally be selected as best able to resist London smoke and atmospheric changes; but the contrast with red brick is too marked. Corsehill (a red sandstone from Dumfries), which is easily worked, weathers well, and can be used at about the same price as Portland, is strongly recommended. Granite, both rough and polished, would be used in such positions as would give it its full value in the general effect of the building. External statues and groups would be of bronze.

The dome, surmounted by a gilded figure of Britannia, would be covered with copper scales and relieved with gilding. The whole of the constructive portion of the outer dome and cupola would be of iron.

The roofs generally would be covered with green slates. The principal and most elaborate portion of the internal decoration would be confined to the entrance and to the reception-hall, where British granites, marbles, and limestones would be freely used, both in the form of columns, dados, and plain ashlar, and in mosaic decoration of various kinds.

It appears that there are few, if any, Colonial stones or marbles which would be available for extensive use in the building; but in the internal fittings there would be ample opportunity for the employment of many of the beautiful woods of which such fine examples were seen in the Colonial and Indian Exhibition."

We give also the perspective view and principal plan of the design sent in by Dr. Rowand Anderson. The following explanatory remarks are taken from his report:—

"As the level of the site is below that of New-road, I propose to keep the basement entirely above ground, and to set back the building about 80 ft. from the line of this road, and enter by an elliptical ramping approach, somewhat similar to that to the Natural History Museum. The floor of this basement is kept a little above the surface, so as to form tunnels below the corridors, and at some other parts for drains, water, steam, and all other piping, &c., and large enough for workmen to get at any part of everything that is in them.

Off the entrance-hall is the porter's and inquiry office on one side, and on the other the post-office, telegraph-office, and telephone-room.

Branching right and left are the corridors for access to all the business parts of the building, which are thus kept entirely separate from those parts of the Institute that would be frequented by the general public and sight-seers; beyond this a fore-hall, and then the great reception-hall. The public access to the museums is right and left from this fore-hall, those on one side being equal and similar to those on the other, and thus equally divided between the United Kingdom, India, and the Colonies.

The public lavatories are provided in such a position as makes them easily accessible, and where they can be ventilated to the open air, and at a distance from all room windows.

I propose to locate all the boilers, engines, dynamos, &c., in a central position in the basement, between the entrance and the great hall.

I would suggest the use of oil as a fuel, because it is cleaner, and economises labour to a large extent in attendance, stoking, and the removal of ashes, and renders a large chimney unnecessary.

The engines and dynamos for the electric lighting will be placed in the courts, and so prevent any noise penetrating into the building.

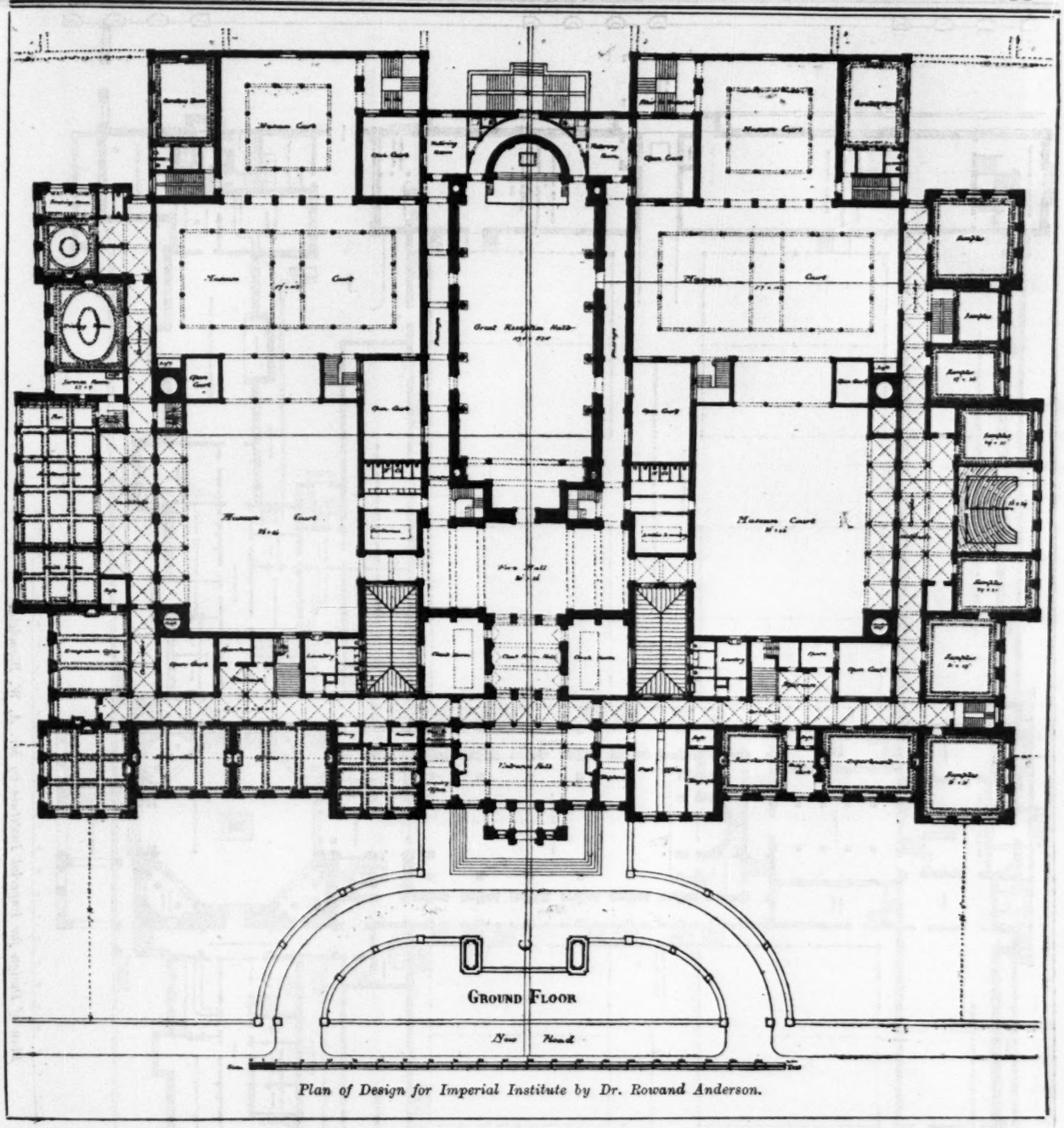
The building would be heated by low-pressure steam, returning all the water of condensation automatically to the boilers.

The great reception-hall, general conference-room, library, entrance-halls, staircases, and corridors would be fitted with steam radiators, and the museums warmed from steam piping arranged in compartments below the floor, provision being made for the introduction of fresh air wherever required. Ordinary fireplaces would be used in all the business rooms.

The ventilation of the building would be chiefly effected by the four great upcast shafts,—the draught being produced by the use of compressed air. Over each corridor is a vitiated-air chamber, having connexions with all the apartments, and the museums, and these upcast shafts.

The great hall is provided with its own upcast shafts.

In dealing with the architectural treatment of



Plan of Design for Imperial Institute by Dr. Rowand Anderson.

this building, considering its purposes, and their exclusive associations with the United Kingdom and the Colonies, and also the place where it is to be erected, I have endeavoured to make this building look like our own country, and to give it the character of the old buildings about London. I have, with these views, adopted that phase of Classical art which prevailed in the United Kingdom about the middle of the last century, and which at that time assumed a character distinct from Classical art in other countries of Europe.

The building is designed for erection in brick and stone of a cream colour tint. The roofs to be covered (for the sake of colour and durability) with lead, but the use of this covering must be determined by the cost; if too expensive green slates should be used.

This combination of materials is founded on good precedents, and it produces a fine artistic effect, which time improves.

The small scale to which the plans are made, and the somewhat limited time allowed for their preparation, has prevented me showing more fully the decorative treatment of the various parts of the building; but there is throughout a large field for the exercise of the Arts of Painting and Sculpture, the stone and wood carver, the glass-painter, and worker in metal.

In the great hall, large spaces are available for wall-paintings, and the entire surface of the vaulted ceiling for decorative painting. Raised on a daïs in the circular recess at the north end, I suggest a seated statue of her Majesty, and on the wall behind it a hemicycle of the great men of her time. In the entrance-halls, the large conference-room, the museums, and refreshment-rooms, &c., there is ample space for paintings, sculpture, and decorative work of every class; and in the reading-rooms and Emigration Offices there are large wall-spaces for maps, &c. Outside and in front I suggest places for two equestrian statues, such as Lord Clive and General Wolfe, who are so intimately associated with the founding of our Empire in India and Canada. In the tympanum of the portico, sculpture represents the Arts of Peace, and above this a seated figure of Britannia."

ORVIETO CATHEDRAL.

WE give a general view of the façade of the famous building which its architect, Lorenzo Maitani, under whom it was commenced in 1290, had the good fortune to see completed during his own lifetime, a circumstance which probably operated in favour of the unity of design and character in the building itself.

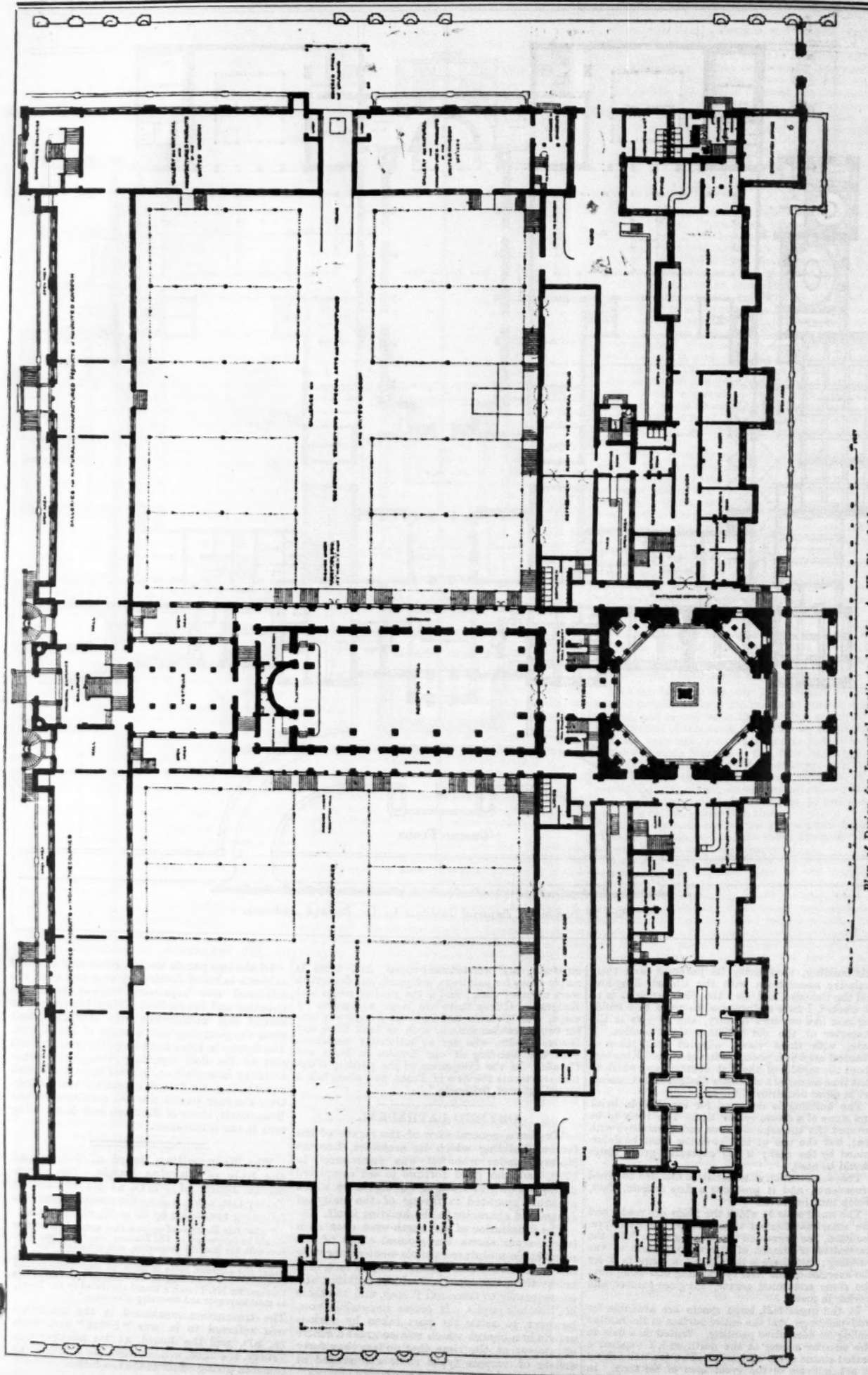
The illustration of the north-west door on a larger scale shows the general effect of the remarkable sculptured panels, once erroneously attributed to Niccolo Pisano, who, in fact, died before the commencement of the building, and subsequently to Giovanni Pisano, and to others of Niccolo's pupils. It seems impossible now, however, to settle the part taken by various artists in a church which was so great a centre of interest at the time that no less than forty artists of various types came and settled at Orvieto to take part in the work.

Of the two panels shown, consisting of small subjects in relief divided by vine branches, the left-hand one represents scenes from the Creation and the earliest Biblical history. The second one commences with Abraham, and gives the genealogy and descent of the Virgin. The figures in these sculptures, those on the left side of the door especially, though somewhat childlike in modelling, in their large heads and naïve action, are full of expression and feeling. Over the four panels are the emblems of the Evangelists, those of Matthew and Mark being seen in our illustration.

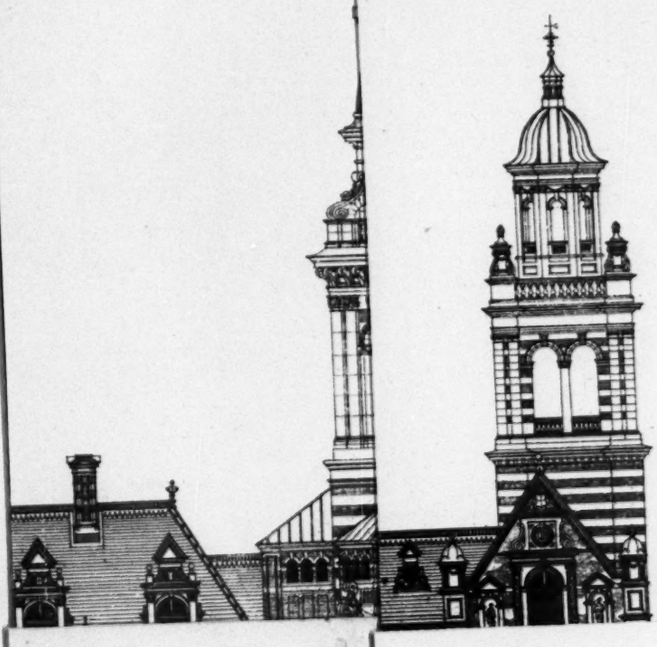
The Metropolitan Board of Works and the Sale of Surplus Lands.—The Metropolitan Board of Works, at its meeting on Friday last, after a long discussion, passed the following resolution by 24 to 20, viz.:—

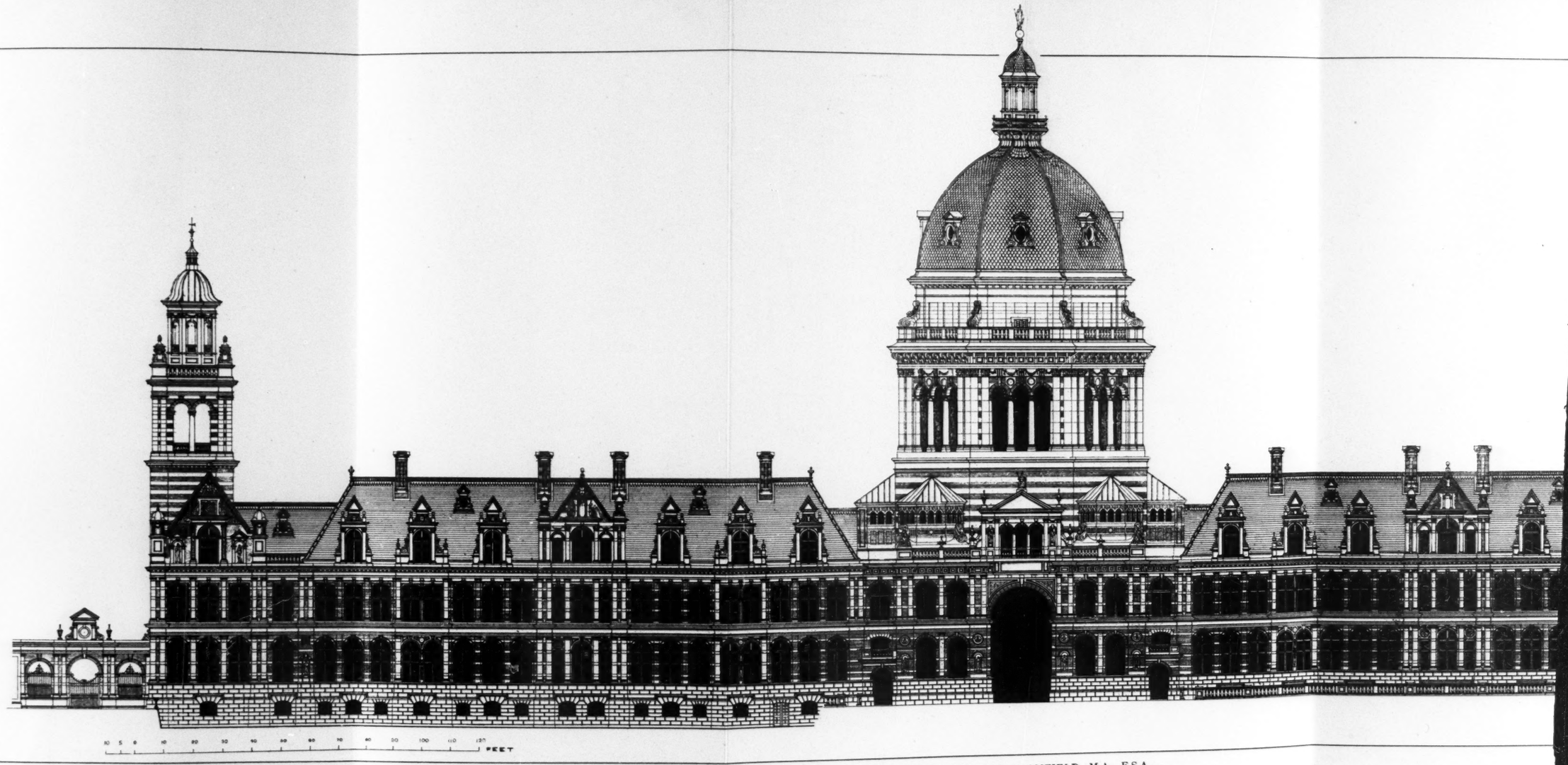
"That this Board is of opinion that none of its officers should be interested in the financial success of any dealings with the Board's properties, and considers that Mr. Robertson's admitted financial connexion with his brothers, under the assumed name of Grey, in such dealings, and especially the unauthorised substitution of one of his brothers for Mr. Foster, a tenant appointed by the Board, as most improper and deserving of censure."

The transaction mentioned in the resolution was referred to in our "Notes" last week (p. 87), and the Board, at its meeting this Friday, the 22nd, will consider the course to be taken in giving effect to the resolution.



Plan of Design for Imperial Institute by Mr. A. W. Blomfield.





DESIGN BY MR. A. W. BLOMFIELD, M.A., F.S.A.

FRONT ELEVATION.

Plan of Design for Imperial Institute by Mr. A. W. Blomfield.

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Arthur W. Blomfield

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DESIGN BY Mr. A. W. BLOMFIELD, M.A., F.S.A.

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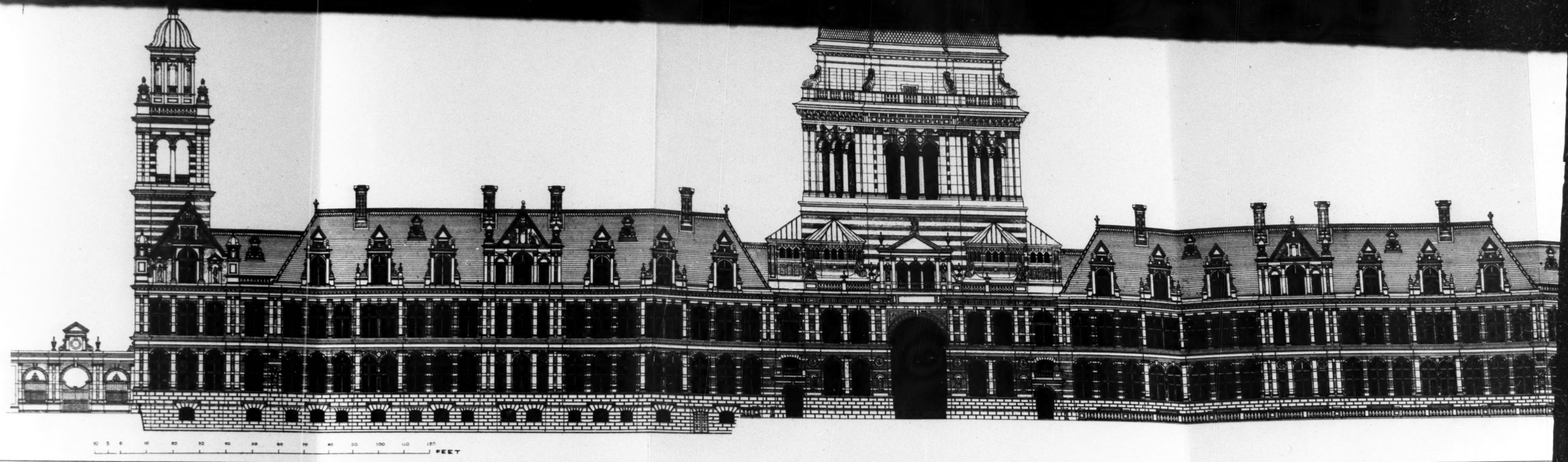

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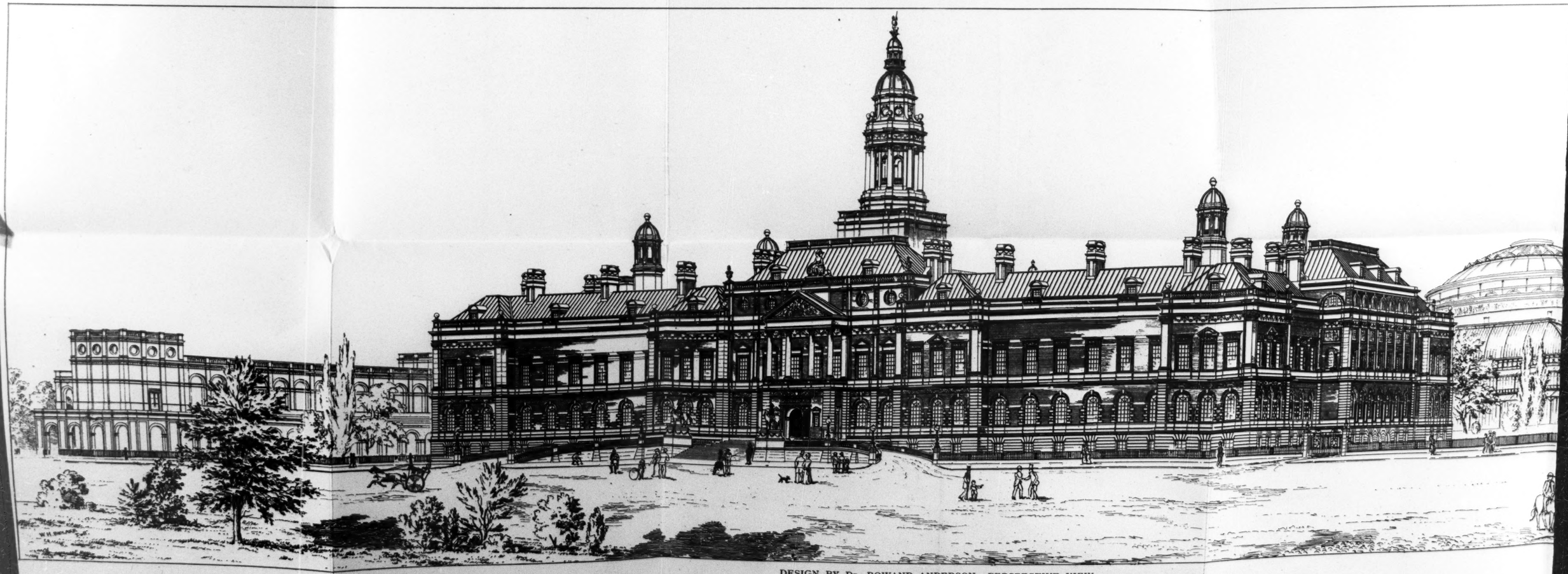
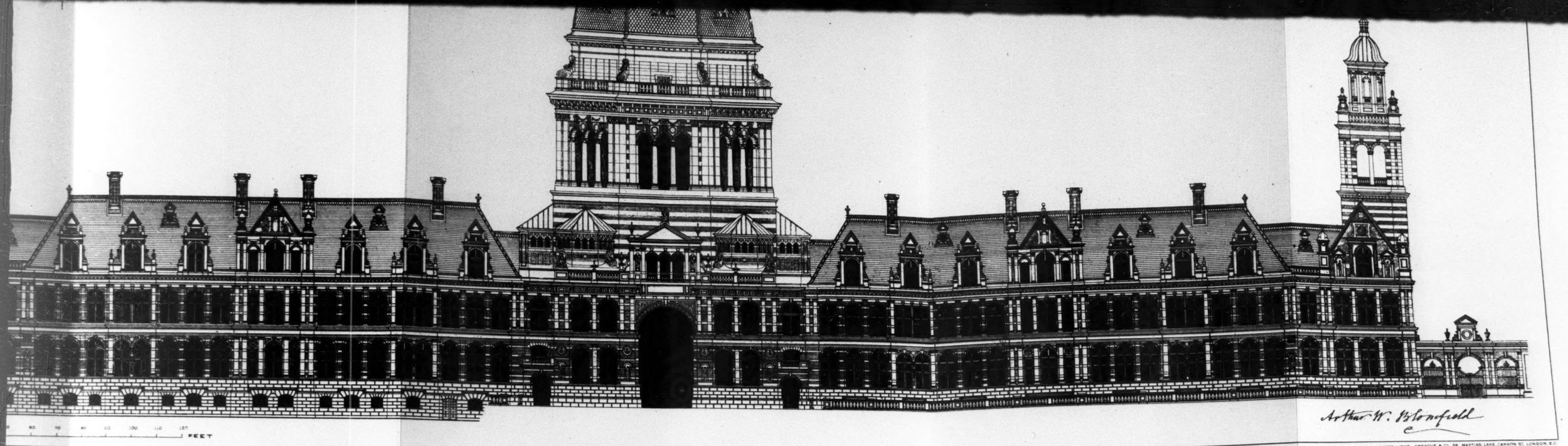


DESIGN BY Dr. ROWAND ANDERSON.—PERSPECTIVE VIEW.

COMPETITIVE DESIGNS FOR THE IMPERIAL INSTITUTE.



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DESIGN BY Mr. A. W. BLOMFIELD, M.A., F.S.A.

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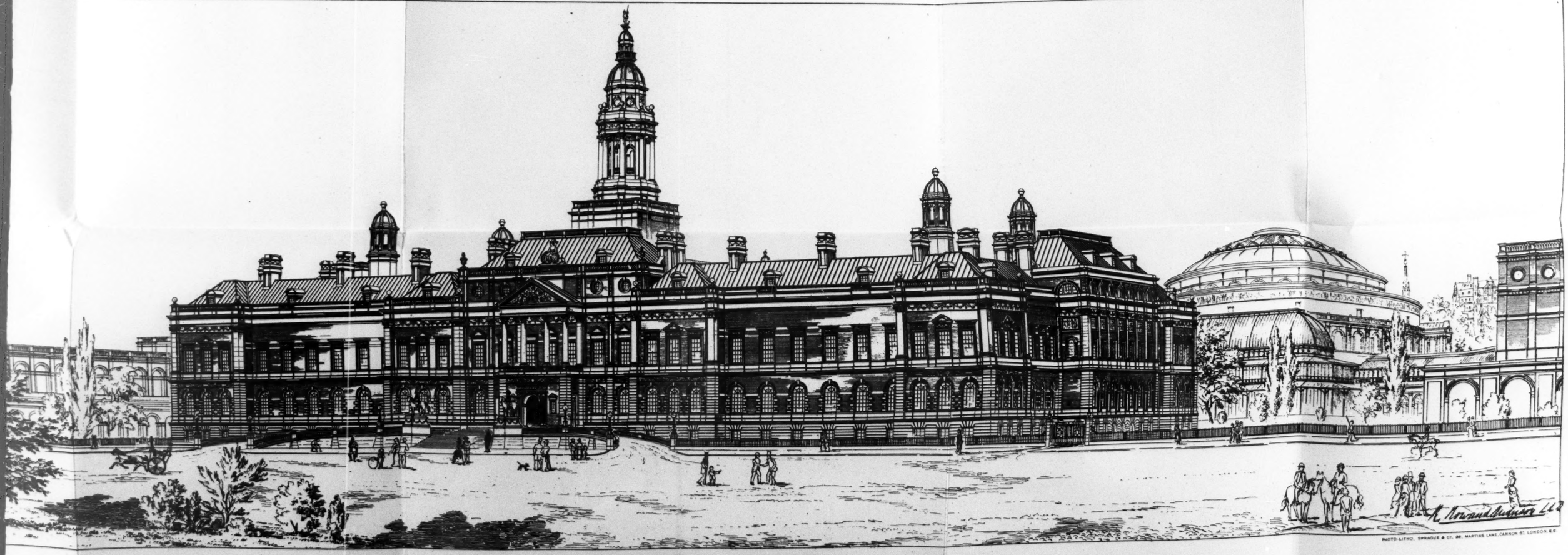

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DESIGN BY Dr. ROWAND ANDERSON.—PERSPECTIVE VIEW.

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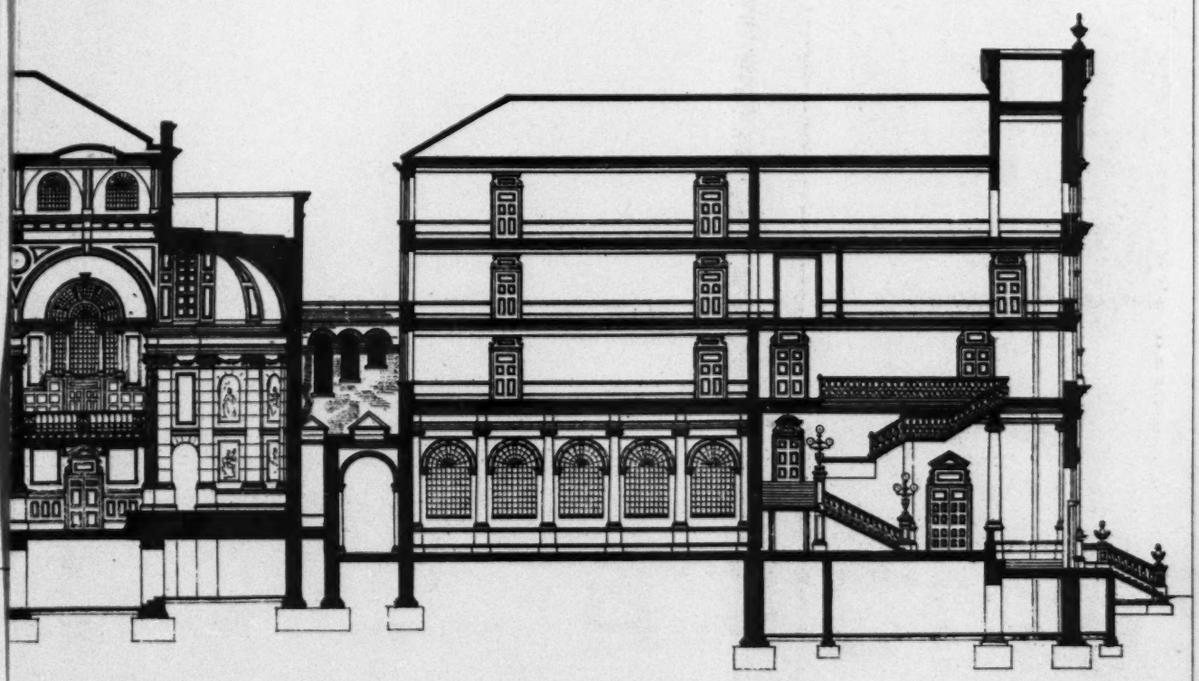
NORTH-WEST DOORWAY, ORVIETO.



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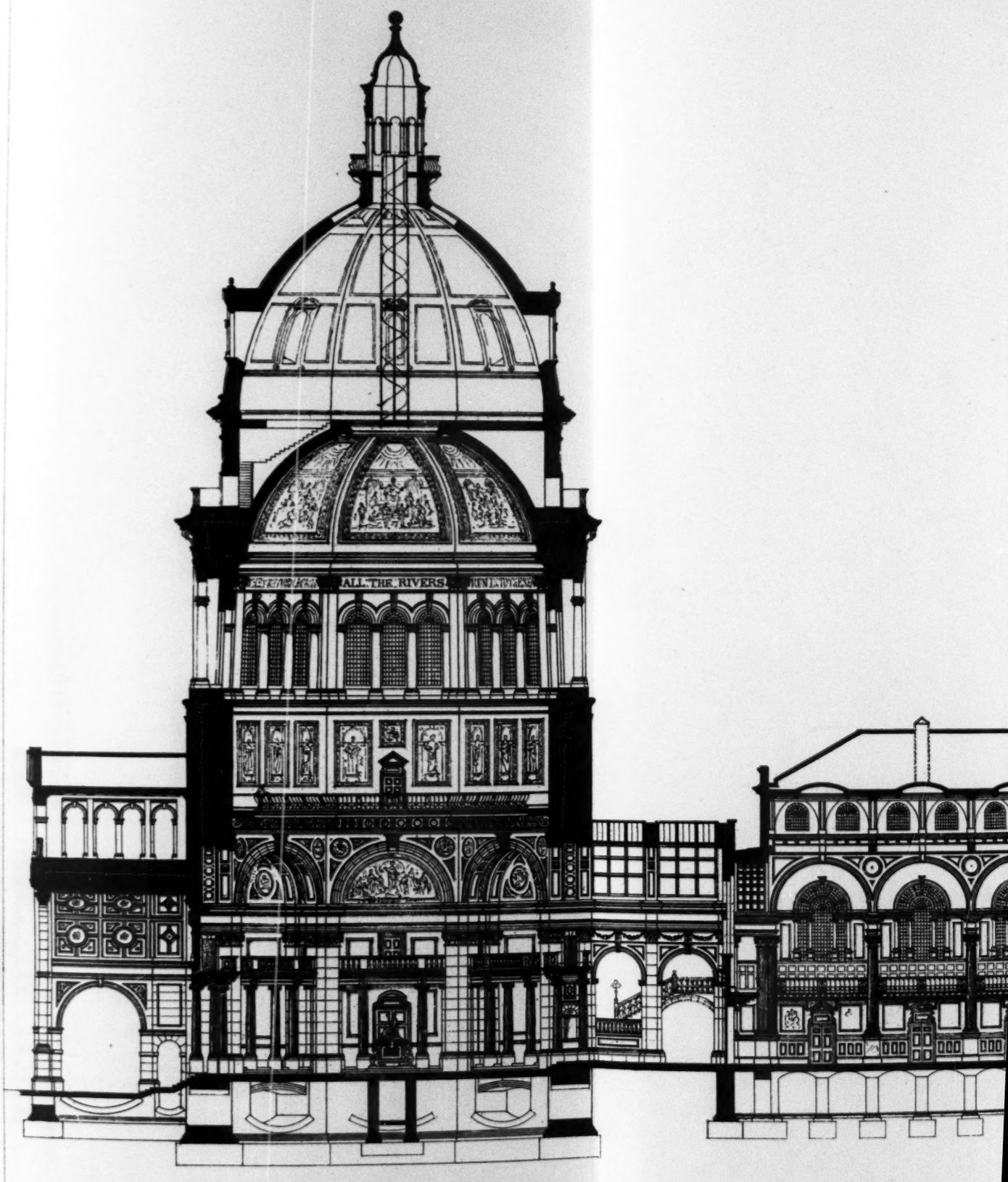

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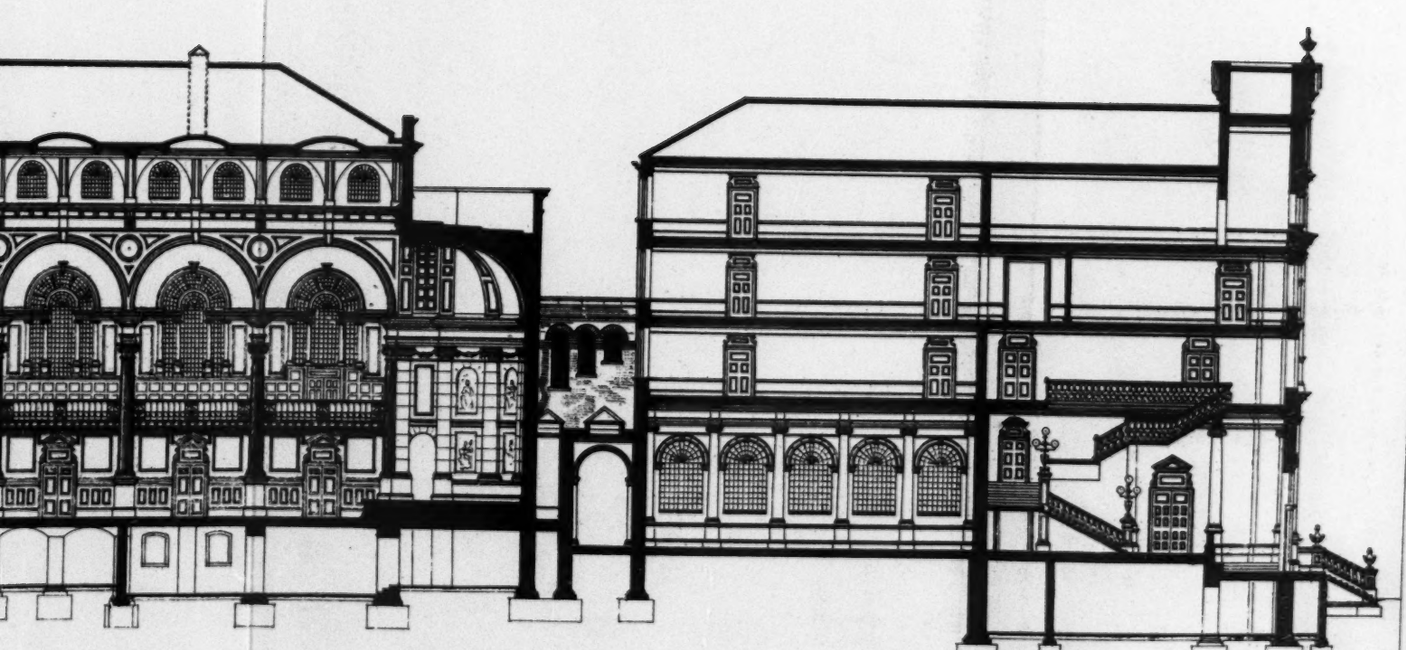

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FOR THE IMPERIAL INSTITUTE.

W. BLOMFIELD, M.A., F.S.A.

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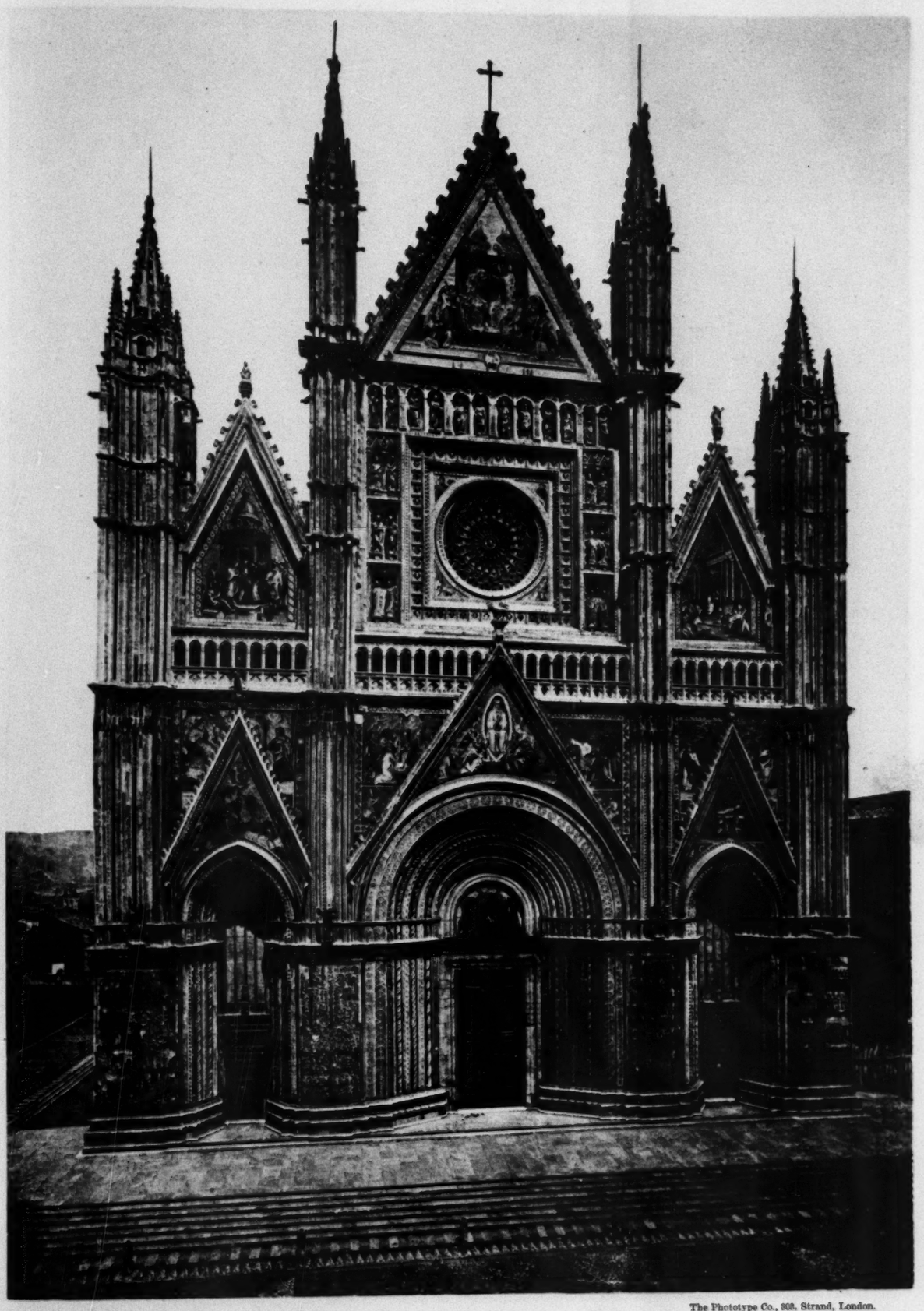

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WEST FRONT, ORVIETO.

SANITARY INSTITUTE OF GREAT BRITAIN.

THE anniversary meeting of the Sanitary Institute was held on Thursday, the 14th inst., at 74A, Margaret-street. The chair was occupied by Sir Douglas Galton, F.R.S., who presented the supplementary report of the judges on the exhibits at last year's Exhibition at York, deferred for further practical trial. The judges recommend that medals should be awarded to the undermentioned exhibitors:—

Doulton & Co., Lambeth, for Self-adjusting Joint for Stoneware Pipes.
White, W. P., & Co., London, for Nicholls' Soot and Salt Closet.
Wragg, T., & Son, Burton-on-Trent, for Hassall's Joint for Stoneware Pipes.

They also recommend that certificates of merit should be awarded to the undermentioned exhibitors:—

Burn & Baillie, London, for Combination Bath Fittings.
Calvert, F. C., & Co., Manchester, for Boro-Phenol.
The Stanhope Co. (Limited), London, for Electro-Magnetic Telephones.
Woolley, James, & Co., Manchester, for Sanitary Rose Powder.
Broad & Co., Paddington, for Rock Buff Facing Bricks.*

The judges have not yet had sufficient opportunity of testing several other exhibits, which are therefore of necessity deferred for a future report. They regret that they are unable to recommend the award of the Richardson Medal. Their report is signed, "W. H. Corfield, Chairman; A. Wynter Blyth, W. Eassie, Rogers Field, Henry Law, J. Wallace Peggs, H. Saxon Snell, Ernest Turner."

Dr. G. V. Poore next gave an address "On the Shortcomings of some Modern Sanitary Methods." It was an attack on the practice of mixing putrescible matter with water, or, in other words, on the method of dealing with excrement by means of water-carriage. The following is an abstract of the paper:—Recent investigations have shown that the decomposition of organic matter depends upon the growth of microbes. When organic matter is buried not too deeply in the soil the microbes are of a kind which cause oxidation and nitrification, and prepare the organic matters for absorption by the roots of plants. When mixed with water the microbes produced are different, and those offensive changes are caused which are known as putrefactive, and ammonia and carburetted hydrogen are formed, and oxidation is prevented. The mixing with water prevents and delays the only natural use of organic refuse, viz., that of forming food for plants. This practice, therefore, may be regarded as one which is antagonistic to natural law, and it is evident that such an antagonism is worse than hopeless. The mixing of organic refuse with water in cesspools and sewers causes putrefaction of it, and these putrefactive changes are not only most repellant to our senses, but are a great and universally acknowledged cause of diseases of various kinds. Further, many diseases of the zymotic class have of late years been shown to depend upon living organic particles, which possibly multiply in putrefying liquids, and most certainly are disseminated in the most perfect manner possible when organic matter containing them is mixed with water and allowed to flow to rivers or wells. In connexion with this aspect of the case, it must be remembered that no method of "sewage treatment" can be considered as reliable for the removing or rendering innocuous of zymotic organisms. This practice of mixing with water involves a neglect of the great principle of "resisting the beginnings," and as an illustration of this the lecturer alluded to the cholera epidemic of 1866, when the excrement from the house finding its way into the River Lea, presumably caused the death of 4,000 persons, and he pointed out that if this matter had been buried or burned, instead of being mixed with water, many or all of these lives would have been saved. The "Water System" inevitably produces a fouling of our rivers. Of this fact the Thames, the chief source of our water supply, is a glaring example. With increase of water-carried sewage pure water is getting daily more difficult to obtain. This is of importance, not only to us, but to our animals, and it must be remembered that the health of animals and of human beings has been shown in many instances to be very intimately connected. The financial and economical results of the water carriage system have been disastrous. Sewers which cost millions cost thousands to keep in repair, and the "treatment" of the sewage must be a permanent charge and never a source of profit, because the mixing with water arrests nitrification. The ratepayer is being crippled and the land exhausted. The farmers are crying out for "protection," and they most certainly ought to be protected from the impoverishing effects of sewers. The lecturer contended that we have no right to borrow money for sewers, because they must be a source of expense and never a source of profit to those who come after us. The results of co-operation were most disastrous when persons co-operated to commit a blunder, and each generation ought to be at the sole charge of its own sanitary experiments. It was pointed out that water carriage, by enabling houses to be built without any curtilage whatsoever, was a great cause of overcrowding,—the greatest of all sanitary evils. It was to be remembered that this system of "water carriage" was not limited to towns, but was common in country districts where there was no possible excuse for it. The lecturer said he was a strong advocate for the dissemination of sanitary knowledge, but he was no advocate for legislation, by means of which blunders were often stereotyped. He advocated the encouragement of independence by householders, and he contended that those who did not use the sewers should not be compelled to pay for them. Our present method of levying rates was a distinct premium on jerry-building and overcrowding, and must produce mischief. If an equitable adjustment of sanitary rates were instituted, and the Pollution of Rivers Act were enforced against individuals, and if water were supplied by meter, sewage schemes in such places as the Thames Valley would very quickly become unnecessary, and people would resort to rational methods of treating organic refuse, *i.e.*, they would subject it to immediate burial. The outcry for allotments was good, and if the allotments were near the houses so much the better. Sewage farmers advocated an acre to every 100 persons, but it was clearly better to let the 100 persons live on the acre of ground, and thus save the expense of sewers, and reap the benefit of the produce. If every cottage (for the average five persons) had 1-20th of an acre of ground, the sewage difficulty would disappear, and there would be an increase of health and contentment. A "Workmen's City" built on this plan would accommodate 64,000 persons to the square mile, or, making allowance for roads, 50,000 to the square mile. With an equitable adjustment of sanitary rates, the lecturer felt sure that this plan would be very generally adopted. The change would be very gradual, but he considered that the great failing of the present day was the constant attempts which we make to hurry when hurry is not possible.

* This was exhibited at Leicester, but the testing was not completed in time for the last report.

In the discussion which followed,

The Chairman (Sir Douglas Galton) said he had been extremely delighted in listening to Dr. Poore's charming paper, which contained so many points of interest, and gave rise to many thoughts as to the various problems of sanitation. One of those problems was that of the overcrowded state of the metropolis, which was a matter of the most serious moment, every vacant space being built over without the slightest remorse. It would be in the recollection of some who were present that after the Health Exhibition a proposal was made to build a sanitary house, and that the Duke of Westminster offered a site for it. The ground-rent, of course, had to be paid, and there was also the interest on the cost of the building; but the scheme fell through because it was found to be impossible to build a sanitary house on the site allotted to it, so as to meet those charges. That was the case with London houses, and until the public insisted on having a sufficient area upon which to build, they would not get really healthy houses in the metropolis.

Mr. Baldwin Latham, M. Inst. C.E., proposed a vote of thanks to Dr. Poore, and added that although he agreed in the main with the tone of the paper, there were many matters in it which might be subject to dispute. He had constructed many drains and sewers in his time, but he was afraid that if Dr. Poore was right in his contentions, he had made a great mistake. At the same time, if a comparison were made between the death-rates of former generations and those of the present time, things came out much more strongly in favour of modern sanitation. No one could have listened to Dr. Poore without having his mind awakened to the many points which required further elucidation, and there was no doubt that a vast amount of good might be done by following the advice that had been given. A great amount of evil occurred through the want of proper scavenging, and the leaving of organic putrifying matter in the immediate vicinity of houses. From the fluctuations that took place under ordinary climatic conditions, there was much to be done in future, and as long as they could not maintain a general good average death-rate, not subject to violent fluctuations, they had not succeeded in doing their duty as sanitarians.

Mr. E. C. Robins seconded the vote of thanks. Dr. Poore, he said, had taken them to the state of things which existed before sanitation was understood, and he did not seem to say that sanitation had failed, or that the death-rate had become greater, but rather that there were conditions of things under which the old systems were more suitable than the modern ones. If, therefore, they were anxious to have everything done on the selfsame lines they would soon find themselves in an evil case.

The resolution was then put and carried by acclamation.

Dr. Poore, in replying, remarked that he had commenced his paper by saying it contained a good deal of debateable matter. It had been his great desire to find the best principle of dealing with the question, and having found the scientific principle along which they should move, they must see whether it was practicable to put it into force. He believed the principle he advocated was the true and proper one, and he was exceedingly obliged to Mr. Baldwin Latham for the gentle way in which he had been handled. To Mr. Latham, and sanitarians like him, a great debt was due for the manner in which they had carried out a principle of sanitation which, however imperfect it might be, was unavoidable in a great overgrown city like London.

On the motion of Mr. Symons, seconded by Mr. Kingdon, a cordial vote of thanks was passed to the Chairman, and the proceedings terminated.

ANNUAL DINNER.

The anniversary dinner of the Institute was held on the evening of the same day, at the Holborn Restaurant. The chair was occupied by Professor W. H. Corfield, who was supported by, among others, Sir Douglas Galton, Dr. Mackellar, Mr. H. C. Cunningham, Mr. Baldwin Latham, Prof. T. Hayter Lewis, Major Flower, Mr. E. C. Robins, Mr. H. H. Collins, Mr. H. Saxon Snell, Mr. James Doulton, and Mr. E. White Wallis (Secretary).

The Chairman proposed the usual loyal and patriotic toasts.

Sir Douglas Galton, in proposing the toast of the evening, "Success to the Sanitary Institute," said that with her Majesty's reign began the systematic registration of births and deaths, and, as far as they had them at present, the causes of death; and that sanitary legislation which culminated in the Acts of Parliament of 1875, and those which now prevailed. It was felt, some ten or fifteen years ago, that sanitary science would never be thoroughly appreciated in this country unless the public were educated in it, and unless there was a means by which it could be generally diffused over the whole land. For that purpose the Sanitary Institute was formed, and that had been its mission.

The Chairman, in responding, said it was necessary to show good reason for the existence of the Institute in order to encourage others to assist in the work they had in hand. The Institute had been in existence for ten years, during which time nine Congresses had been held in different parts of the country, and by this means a great many people had learnt something about sanitary work. Besides this, the Institute issued a volume of Transactions containing the papers read at the Congresses, with abstracts of the discussions and various other matters connected with the work of the Institute. Those volumes would be found to contain a mass of valuable and interesting matter bearing upon practical sanitary work. The Institute had also issued two volumes, one consisting of a most important epitome of the works of Dr. William Farr and another of the works of Sir John Simon, whom they congratulated with Sir Douglas Galton on the honour

her Majesty had done them. At each Congress they had exhibitions of sanitary appliances and apparatus, the number of exhibitors at each exhibition being now 130, with about 900 exhibits, while the average number of visitors at the three last exhibitions had been no fewer than 34,000. At those exhibitions judges were appointed to examine the exhibits, and that was done so carefully that the public might take it as certain that the exhibits to which medals and certificates had been awarded by the Sanitary Institute, were exhibits worthy of attention. Then, again, they had held examinations for surveyors and inspectors of nuisances in sanitary science, and these had been a decided success. At the first examination, in October, 1877, only ten candidates presented themselves, while at the examination in June, 1887, there were no fewer than seventy-seven candidates, forty-eight of whom passed. It was, therefore, clear that those examinations had met a public want. He was glad to say that the Council had decided to invite the International Hygienic Congress to hold its meeting in London in 1889, and it should be a meeting to be talked of for many years to come.

Professor Hayter Lewis gave the toast of "The Visitors," coupling it with the names of Mr. Justice Cunningham, who had done so much in connexion with sanitary works in Calcutta; of Dr. Mackellar, who was connected with the Sydney Board of Health; and of Dr. Sargeant and Alderman Taylor, of Bolton, the latter being Chairman of the Committee that had built the admirable Fever Hospital in that town.

Mr. Justice Cunningham replied, and referred to the work being carried on by the kindred society in Calcutta. The difficulties were enormous, and the wildest flight of their imagination was at some distant date to be able to rival the condition of things that had been arrived at in England.

Dr. Mackellar, in responding, said that in Australia they had perhaps the most salubrious climate in the world, and yet the true Briton had done everything in his power to pollute it. In Sydney the water supply had been fouled for no reason whatever, and the result had been that the zymotic mortality was very much greater than in England, although there was none of the poverty and squalor so common in this country. They had now, however, woke up to the necessity for some health laws, and there would not be much difficulty in drawing them up from the mass of wealth contained in the English Health Act of 1875.

Mr. Alderman Taylor also replied, and expressed the hope that the Bolton Congress would be the best the Institute had yet held.

Mr. H. H. Collins gave "The Successful Exhibitors," coupled with the name of Mr. James Doulton, who, in responding, bore testimony to the thorough care and impartiality with which the judges had discharged their duties.

The other toasts on the list were "The Press" and "The Officers of the Institute."

INSANITARY CONDITIONS AT MARGATE.

WE have just received from the Local Government Board Dr. Page's report to the Board "on the general sanitary condition of Margate in relation to the continued existence of typhoid fever in the borough." The report, though somewhat belated,* will come opportunely enough to warn intending sojourners at Margate of the risks they are likely to run. What those risks are will be seen by the extracts from Dr. Page's report, which we append. If the town suffers this season and next from a comparative dearth of visitors, its inhabitants will hardly thank the local authorities for their apparent supineness in regard to sanitary matters. The bracing air of Margate has long and deservedly had a perennial attraction for Londoners, many of whom must have been quite ignorant of the facts disclosed in Dr. Page's report, from which the following paragraphs are extracted:—

"*Water Supply.*—The water supply of Margate is obtained from waterworks constructed in 1859 by a private company, and purchased in 1880 by the Corporation for the sum of 60,000*l.* The water is pumped from a well at Tivoli on the south-west inland boundary of the town, sunk in the chalk to a depth of 53 ft. This well is 10 ft. in diameter, and at the bottom adits or headings extend, I am informed, to an aggregate length of 700 ft. From the well the water is conveyed by a single rising main to covered reservoirs in the town, one of which, with a storage capacity of 200,000 gallons, supplies the higher parts, including the Fort and Cliftonville districts, Milton, Byron and St. Peter's road, Westbrook, and Garlinge (the last named extra urban), 1,350 houses altogether, while the rest of the town, comprising some 1,900 houses, is supplied from a low service reservoir, holding 450,000 gallons. In the intervals of charging these reservoirs, the whole town is provided directly from the mains. The service is constant, and distributed to the houses without the intervention of storage cisterns. A supplementary source of water supply from a chalk well in the Dane Valley, worked by a windmill, is no longer in use. Formerly, houses in the lower part of the town drew their water from shallow wells sunk in the alluvium, but at the instance of the Medical Officer of Health these have, from time to time, on chemical evidence of impurity, been closed, until they have ceased to exist or have been made into cesspools. From doubts as to the capability of the Tivoli pumping station continuing to meet the requirements of the borough, additional works of water supply are now engaging the attention of the Sanitary Authority, for the construction of which the Board sanctioned, in April of last year, a loan of 6,500*l.* The new well is sunk in the Dane Valley, near the windmill site, into the chalk for 68 ft., and is 12 ft. in diameter, with three adits at the bottom carried into the chalk in different directions for some 300 ft. at the present time. In March last the whole of the borough was supplied for about ten days from this source, but the service is now interrupted pending further structural works, chief of which is the extension of one of the adits for 1,000 ft. across the valley, with the view of intercepting the flow of underground water, believed on geological evidence as to the coincidence of the valley with the direction N.W. and S.W. of the chief vertical joint planes in the chalk to take place in this direction.

With regard to the quality of the present supply from the Tivoli well, there is every reason to regard it with the gravest suspicion, as may be judged from the following account of the surroundings:—

The well itself is sunk in the chalk, near the edge of a strip of grassy marsh land extending from this point to the sea, about half a mile distant, and known as the 'Brooks.' This marsh has proved, on examination, to consist of the usual silt, sand, clay, and the like, deposited in shallow arms of the sea, and highly permeable by water, which stands within a foot of the surface, the latter being only some 6 ft. above Ordnance datum. A foul stream, little else than a stagnant ditch, extends,—one cannot speak of it as flowing,—the length of the marsh, and receives at the lower part of its course drainage from various premises, including a steam laundry, stables, dunghills, and an unknown number of cesspools, behind Marine-terrace. At the time of my inspection a penstock thrown across the stream towards the Tivoli well was explained to me as designed to prevent a backflow, which on occasion had been observed in that direction.

About half a mile or less beyond the pumping station is the cemetery, situated on higher ground in the chalk, and according to the evidence of Mr. Whitaker, of Her Majesty's Geological Survey, in his report on the Margate water supply, 'more or less on the line of underground flow towards the pumping station.'

Lastly, a populous neighbourhood, entirely dependent upon drainage into cesspools, is growing up in the vicinity of this well, and, incredible as the statement may read to those who know the dangers of contaminated water, I have to state that during the present year a row of a dozen houses has been built within 70 ft. of the pumping well, the houses having no other means of excrement disposal than into separate cesspools sunk into the chalk for a depth of 20 ft. These cesspools had been made with the assent of the Sanitary Authority, who had required that these receptacles should be cemented. There is ground for suspicion that one of the adits of the well approaches to within a few feet of these premises.

As regards risk of contamination of the water-supply in the course of its distribution through the town, this appeared to me to exist to a very serious extent in the presence, especially in the poorer neighbourhoods, of numerous water-closets destitute of any proper flushing apparatus, and in direct communication, by means of screw-down taps, with the mains. I am told that the matter has been brought pointedly to the notice of the Sanitary Committee without adequate result. As local interruptions of the water-supply for an hour or more at a time are of frequent occurrence for purposes of alteration or repair, involving in some cases, in consequence of insufficiency of valves, considerable length of main, the danger to which the public health is subjected by the suction of possibly infected excremental matters into the pipes from some one of 200 or more of such water-closets, demands immediate appreciation and remedy by the authority responsible for its continuance.

As to the chemical evidence of contamination of the Tivoli water supply, I learn, from a joint report made in December last to the Sanitary Committee by the Medical Officer of Health and the Borough Surveyor, that in September of the same year the Borough Analyst, commenting upon certain analyses made by him, reported to this effect: 'The results pointed distinctly to sewage percolation, and to a considerable admixture of sea water, very objectionable features of a public water-supply, and calling for speedy remedy.'

Sewerage.—Margate is a cesspool town. The large majority of houses of all sorts have no other means of drainage than into cesspools. The Margate cesspool is a receptacle dug to a depth varying from 20 to 40 ft. into the chalk, usually of conical shape, 10 to 12 ft. in width at the base, narrowing to 3 ft. or thereabouts at the entrance, which is domed or flagged over, and covered with the soil of the back yard or basement. Disused wells serve their turn frequently for cesspools. There is no pretence at making them water-tight, the object had in view being to expose as large a surface as possible of absorbent chalk, and so promote soakage in every direction in the hope of postponing indefinitely the day when a cesspool may require to be cleansed, a necessity which is only recognised by the choking of house-drains or the welling up of the contents upon the surface. Even then, as the cost of emptying may amount to 5*l.* or 10*l.*, the duty is sought to be evaded, and tenants will leave a house rather than perform it, or, in other instances, limit the use of perhaps an already overflowing cesspool by throwing their slop water elsewhere than down the house drain. This state of things was found in existence on Dr. Gwynne Harries's inspection of the borough in 1873. Then, as now, tenants in Marine-terrace were throwing 'their slops out through their back doors in order to lessen the pressure on their pits.'

In houses of the larger and newer sort the cesspools are ventilated by means of 3-in. pipes carried up the houses. Ventilation by the same means has recently been provided in some of the poorer dwellings where outbreaks of fever have drawn attention to defects.

In the matter of house drainage, considerable progress has been made in cutting off sinks and other waste pipes from the outside drains, and the ventilation of water-closet soil-pipes, but in the poorer class of houses drainage defects are still numerous, those most commonly met with being a loose bell-trap, almost constantly displaced from the head of a sink-pipe, going directly into the cesspool, and thereby allowing indraught of the foul and, on occasion, infected air of the latter under the influence of the fires and warmer atmosphere of the dwelling. Several instances of this kind were noted in the course of my inquiry. In a large number of houses of the better class, the 3 in. ventilating pipes from cesspools and water-closets were noticed to be so zigzagged with angles as to destroy any efficiency they might otherwise have possessed for their intended purpose.

Some fragmentary sewerage exists in localities next the sea front. The so-called 'town drain' is the property of the Corporation, and begins at a trapped gully and catchpit in the town yard, King-street, whence its course is by the bank of that street, Love-lane, corner of the Townhall, Broad-street, Bridge-street and Bankside, to its outfall at low-water mark eastward and within the jetty extension. With a view to remedying certain grave defects, formerly a source of great nuisance, this drain has been relaid for some 870 ft. with 15 in. pipes, and furnished with a flushing-tank in the first part of its course, and at the outfall for some 500 ft. with 2 ft. iron pipes. It has also been provided with penstock and valves, with the object of preventing the tide driving back and forcing out the contents upon the surface, and a storm overflow of 15 in. pipes into the harbour. In its course this 'town drain' receives antiquated drains from High-street and Market-street, the latter having previously been joined by a drain of modern construction from Marine Drive, conveying sewage from some twenty-five or thirty houses which formerly drained directly into the harbour. But as the old section below this point in Broad-street is only of brickwork, some feet in diameter, it becomes choked at times of heavy rainfall at high tide, when flooding of basements and courts in the neighbourhood results.

The stream from the 'Brooks,' already mentioned, serves an irregular function of sewerage to houses behind Marine-terrace, under which it is conveyed in an unknown mode by what is spoken of as the 'trunk,' and thence upon the sands, where its point of outfall is shown not far from the Promenade. As at the time of Dr. Harries's inspection, there was on the present occasion no perceptible discharge from the outlet. On the west side of the town, a dozen houses in Royal Crescent, some eighty houses of modern construction in Westbrook, and the Sea Bathing Infirmary are drained by separate outfalls upon the beach above low-water mark. Saving two or three 6-in. ventilating shafts in the upper part of the 'town drain,' none of these sewers are ventilated. With the above noted exceptions the town is unsewered.

In addition to cesspools there are upwards of 700 privies discharging into pits excavated in the chalk, from 6 to 10 ft. deep, in the poor localities of the borough, in many instances in close proximity to dwellings, and often actually against them. The

* It is dated "May 28, 1887," and is countersigned "George Buchanan, Medical Department, June 14, 1887," and yet we only receive it, "with the Secretary's compliments, 11th July, 1887." Surely the issue of documents of such public importance should be, and could be, greatly accelerated?

removal of the vast accumulations of filth in these cesspits is left to the householder, and takes place once or twice a year. In one case met with in the course of my inquiry, the cesspit had not been emptied for two years.

Sanitary Administration.—Mr. Knight Treves, F.R.C.S., is Medical Officer of Health, at a salary of 52*l.* 10s., no part of which is repaid from the Parliamentary grant. Mr. Treves is in busy private practice, and has but little time to devote to the duties of his office. Beyond a statistical account of births and deaths within the borough, there are no continuous records of the sanitary circumstances or other books kept in his department. But outbreaks of infectious diseases have been promptly dealt with in the removal of patients to the Fever Hospital, and the disinfection of houses and things. Mr. Treves has also not failed to bring under the notice of the Sanitary Authority, in his annual and other reports, the more serious defects requiring remedy at their hands. Thus, in his report for 1880, he advises the Authority that the health of the town would be greatly improved by the erection of a public abattoir, and the provision of an efficient system of sewerage. And in the following year he recurs to the latter subject in these terms:—

'The question of drainage is probably the most important one that has ever occupied the attention of the Town Council. There is no doubt that on the manner in which the work is carried out will depend the health and prosperity of the inhabitants of the borough. A good system of drainage would relieve us from the evils caused by our present cesspools, and would, undoubtedly, raise the reputation of Margate in the estimation of the visitors. It would remedy those serious evils from which we suffer in the lower level of the town, and especially remove that reproach to Margate, the town drain. There is also every reason to think that efficient sewerage would diminish our infant mortality, which, although moderate during the last year, has in previous years formed a very serious proportion of our general mortality.'

In his next report, Mr. Treves points out the danger of water-closets in direct connexion with the mains, and urges the Authority to enforce the adoption of flushing cisterns, repeating his unheeded recommendations in 1883. Last year Mr. Treves commented upon the risks of pollution to which the general water supply of the borough was exposed by the surroundings of the Tivoli well.

There is no Inspector of Nuisances giving his whole time to the work, the duties of the office devolving upon the Borough Surveyor, Mr. Albert Latham, C.E., who receives for the combined appointment a salary of 400*l.* a year. Mr. Latham's special duties as Engineer to the Corporation, involving plans and supervision of important public works, are abundant and responsible enough without the imposition of work which requires for its efficiency constant and systematic attention. The circumstances of Margate urgently demand the provision of an adequate staff for the remedy of defects and results of sanitary neglect, which must be sought for without waiting for complaints or outbreak of disease to bring them under the notice of the Authority.

In 1877 a comprehensive scheme for the sewerage and sewage disposal of the borough was prepared by the present Surveyor, Mr. Albert Latham, C.E., and in the following year a loan of 42,000*l.* was sanctioned by the Local Government Board for carrying out the works. Of this loan none has been borrowed, and the Town Council continues in default in not providing for these pressing requirements of their district."

Dr. Page concludes his report by saying that "it has now become, even more urgently than before, a matter of the gravest possible concern for Margate that the Town Council should take immediate steps to improve the sanitary state of the town, in the abolition of cesspits and cesspools, and the provision of an efficient system of sewerage and sewage disposal. Without these essential works all other improvements of a superficial sort will prove of little avail."*

WINDOW AT ST. JOHN'S, CHESTER.

SIR,—In a notice in the current number of the *Builder*, taken from a Manchester paper,—concerning the great west window of St. John's, Chester, which the Duke of Westminster has commissioned me to design and execute as a Jubilee memorial,—you say the subjects are to be taken from the life of St. John. Permit me to say, that is not so.

The subjects to be depicted will be the history of St. John's from the early Saxon days; and the Bishop of Chester and the Rector of St. John's, the Rev. Cooper Scott, are now engaged in kindly looking up old Latin manuscripts, in order to furnish me with sufficient antiquarian data wherewith to design an expressive history of the old Church of St. John the Baptist. EDWARD FRAMPTON.

*** The local paper from which we took the account is responsible for the error.

* This was intended to appear in our last, but was crowded out. Since it was in type the whole of the physicians and surgeons practising in Margate have written to the papers to certify that they have not at the present time any case of typhoid fever under their care in the borough of Margate, and that, to the best of their belief and knowledge, there is not a single person suffering from typhoid fever within its radius. This declaration, however, does not traverse the very serious statement of facts contained in Dr. Page's report.

GOLDSMITH'S TOMB.

SIR,—Referring to your "Note" about Goldsmith's grave (p. 89, *ante*), I believe that the exact spot of Goldsmith's burial is not known. He was buried on the evening of Saturday, April 9th, 1774, in the graveyard to the north and east of the church (albeit, possibly in the now Master's Garden).

Forster's "Life," sixth edition, 1875, says, "No memorial indicates the grave to the pilgrim or the stranger, nor is it possible any longer to identify the spot which received all that was mortal of this delightful writer."

But I think you will find, on inquiry, that the stone whereof the "Note" speaks was laid in 1860.

I have a note that in 1885 the "sexton," or other official, told me that some years ago Goldsmith's coffin was found. He could give me no particulars. I have failed to see him again, or any one who could confirm or extend his statement.

Cyrus Redding writes thus in his "Recollections":—"Colonel Lawrence first showed me Goldsmith's tomb in the Temple churchyard. It was a table-tomb in the north-east corner, since ruthlessly removed altogether. A fire had occurred in a printing-office two or three years before, and the flagstone with the inscription had been cracked by the fall of some bricks, but the inscription was perfectly legible. The ground is now (1857) levelled." This ground belongs to the Middle Temple.

Cunningham, 2nd edition, 1850, says:—"The place [of burial] is undistinguished; but a tablet recently erected in a recess on the north side of the choir commemorates the circumstance." This tablet is now in the triforium of the (round) church. It was erected by the Inner Temple Benchers, 1837, and records that Goldsmith "was buried in the adjoining churchyard."

Pennant is silent on the point. Geo. Godwin, "Churches of London, 1838," does not mention the tablet, or interment; but the church's interior has been modified since that time.

Timbs (1855) mentions the tablet as then in the vestry beneath the organ-gallery. He says Goldsmith was buried to the east of the choir, thus placing the grave where it is known many burials were made, *i.e.*, in the Master's Garden.

I have consulted other authorities, but find nothing to determine the actual position of Goldsmith's grave. W. E. M.

SIR,—In this week's *Builder* I notice that you refer to the state of Goldsmith's tomb.

I may say that some years ago I offered to re-cut the inscription at my own expense, and was recommended to apply to the Treasurer of the Inner Temple for leave to do so. That gentleman, however, referred me to the Treasurer of the Middle Temple, who referred me to Dr. Vaughan, but without success, the Doctor writing to say that, "although appreciating my motives, he was a little afraid to interfere." The matter thus dropped. I wonder that nothing has been done before now.

G. W. UPCOTT.

"ARCADIA" AT THE AGRICULTURAL HALL.

SIR,—Whilst thanking you for your kind notice of "Arcadia" in last Friday's *Builder* [p. 88], there is one point on which I should like to make a few remarks. You express an opinion that the plateaux and steps leading thereto are perhaps not sufficiently strong to bear the mass of people that may congregate thereon. I should like to point out to you that these plateaux and all the approaches have been erected under the most careful supervision, and have all been approved by the District Surveyor, after a careful examination. I have had them all fully tested, and after last Saturday, when there were upwards of 18,000 people in the building, I think that there can be but little doubt that they are absolutely safe. HARRY ETHERINGTON.

Agricultural Hall, July 17, 1887.

The City Architectship.—The *City Press* says that it is not intended to appoint a successor to the late Sir Horace Jones, the City Architect. In his place the Corporation will, on the recommendation of the committee, elect a City Surveyor, whose duty it will be to manage the City landed property.

Humberstone and Evington Drainage.—An inquiry was held on Thursday, the 14th inst., at Leicester, by Major Tulloch, R.E., relative to an application by the Billesdon Rural Sanitary Authority for a loan of 15,000*l.* for works of sewerage for the parishes of Humberstone and Evington, two of the rapidly-growing suburbs of Leicester. The only opposition was in connexion with the area of the contributory districts, but this was ruled by the Inspector as foreign to the inquiry. The scheme was explained by the Engineer, Mr. J. B. Everard, M. Inst. C.E., Leicester, and favourably commented upon by the Inspector.

The Student's Column.

LAND SURVEYING AND LEVELLING.

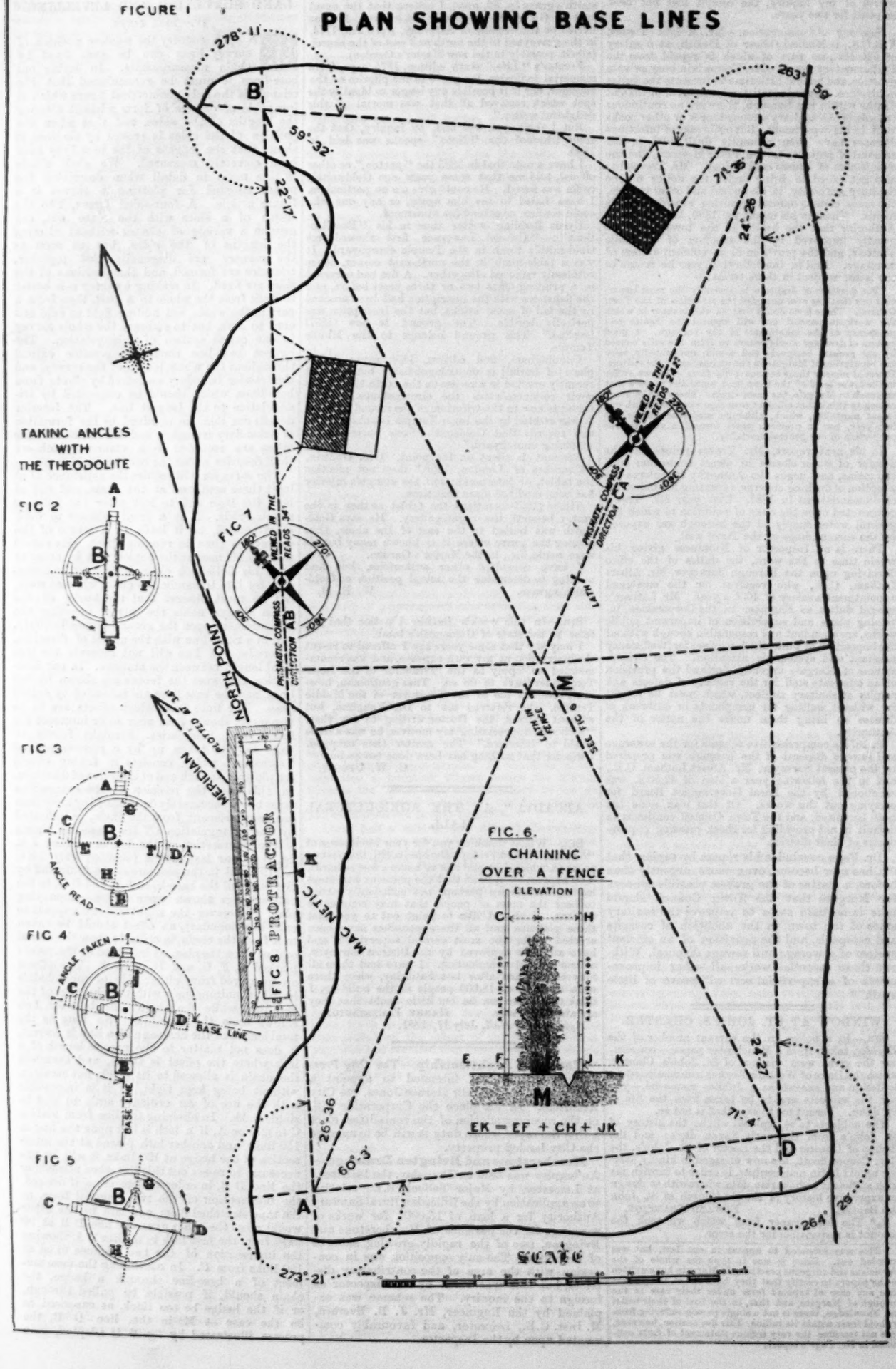
IV.—BASE LINES.

IN open country the relative position of survey lines can be best fixed by chain measurements. In laying out base-lines it must be remembered that the triangle is the only geometrical figure which is incapable of change of form without altering the lengths of the sides, and that when the position of the sides is proved by tie-lines, it shows that the lengths of the base-lines have been correctly measured. We shall allude to this more in detail when describing the means adopted for plotting a survey in a future article. A four-sided figure, like the frame of a slate with the slate out, can assume a variety of shapes without altering the lengths of the sides, but as soon as the corners are diagonally tied together, triangles are formed, and the positions of the sides are fixed. In making a survey it is better to work from the whole to a part, than from a part to the whole, not adding field to field and acre to acre, but to embrace the whole survey in one grand system of triangulation. The longest base-line should if possible extend throughout the whole length of the survey, and the exterior boundary measured by offsets from base-lines, which should be connected by triangulation to the longest line. The interior details can then be obtained by the formation of subsidiary triangles, and the measurements taken are recorded in a manner which we shall describe under the head of Field Book.

The surveyor will require the assistance of at least three men, two at the chain, and one at hold the tape and to look after the poles or ranging-rods. It is a great mistake to work short-handed, as it leads to a waste of the surveyor's time in running about. He should so train his men at the outset that in order to keep his field-book clean, it may not be necessary for him to handle the chain while at work, but he must observe that the leader of the chain always holds the arrow denoting the measurement upon the ground perpendicularly, and in a right line with the object of direction, otherwise the line will not measure the true total length between the stations. In our illustration this week the fences are shown by full lines, and the base lines are indicated by dotted lines. The lines from which offsets are to be measured, should pass near to or intersect the fences and boundaries. Straight fences or walls may be taken up by a process termed "sighting," which consists in taking offsets for plotting, to each end of their line of direction. In this case the position of the extremities must be very accurately determined by more than one measurement from the chain, as indicated by the triangulation off the base-line shown at the intersection of the fences marked J in fig. 8 of our last article (*Builder*, July 16th, p. 119), and in the measurements indicated by the lines off the base-lines A B and B C, to the out-buildings shown upon the accompanying plan. Wherever the slightest bend appears to exist in a boundary, an offset should be taken to it from the chain, in order to show the actual outline upon the plan, as indicated at the points marked E, F, G, and H, in fig. 8. The offsets are measured from either side of each chain's length, simultaneously with the chaining of the base-line, while the chain lies between two arrows upon the base-line. So long as the total length of the chainage of a line is correct, it does not matter to the precise length of a link where the offset is taken, and therefore the chain is allowed to lie slack, but straight, without being kept tight, as it is impossible with the use of an ordinary scale to plot to single links. In chaining the line from station C to station A, if a lath is left upon the line at 150 links, and another lath placed at the intersection of the hedge at 190 links, it will be unnecessary to re-set out this line when measuring the line D B, in order to determine, if desired, the intersection of the two diagonal lines, as the tape stretched from one lath to the other would cross the chain upon the line D B at 30 links from the first lath in the line C A, showing the intersection of the two tie-lines to be at 180 links from C. In continuing the measurement of a base-line through a hedge, the chain should, if possible, be pulled through, or if the hedge be too thick, as supposed to be the case at M in the line D B, the process illustrated by fig. 6 is adopted, care

FIGURE 1

PLAN SHOWING BASE LINES



being taken to place the two poles accurately in line and vertical, chaining forward from E to F, taping the distance between the poles over the hedge, and then adding the measurement to E F, and placing the proper link at G to indicate the amount so determined before continuing the measurement to H.

The magnetic bearing of one of the base lines by which the relative position of the north of the survey is arrived at, may be taken with a theodolite which contains a compass, or with a prismatic compass. If the prismatic compass held in the line A B reads 34°, as shown upon the plan, the bearing can be plotted with a protractor, as shown in fig. 8, allowance being made for the deviation of the true north from the magnetic north (see *Builder*, Feb. 5th, p. 237). If the prismatic compass be held upon the line C A, and viewed in the direction from C to A it would read 242°. We refer our readers to the *Builder*, dated January 29th, p. 203, for explanation of the prismatic compass, and to the *Builder*, dated March 5th, p. 370, for explanation of the construction of a theodolite.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

10,384, Improved Door Lock. G. Nobes.

The subject of this patent is a slam lock for single or swing doors. The end of the bolt which is nearest the door-frame is made cylindrical in shape, while the nozzle is of a semi-globular or rounded form. The part of the bolt inside the lock-case is of rectangular form, and it is controlled by springs. This invention is chiefly designed as a mortise lock; the guide-pins are therefore fitted to a detachable plate screwed to the back end of the case.

10,683, Checking Workmen's Time. P. Everett.

This invention relates to an apparatus combined with a clock or other suitable mechanism and printing or stamping mechanism so arranged that the workman on entering his employment, by pushing or pulling a drawer or slide, obtains a card or ticket on which the date is stamped, or the time or particulars of his work.

10,453, Improvements in Flushing Cisterns. R. B. Evered.

This invention refers to a syphon, the long leg of which extends below the bottom of the tank; the short leg is enlarged at its extremity, and has a plunger working in it. The plunger is pivoted on a lever. When the tank is full of water, and the plunger is near the bottom end of the short leg of the syphon, the latter is also nearly full of water. The upward movement of the plunger lifts the water lying above the same, and causes it to flow over the bend of the syphon, whereby the latter is started. The flow continues until the water reaches the level of the short leg of the syphon, the valve in the plunger permitting the free passage of the water.

5,752, Improvements in Saws. S. Taylor.

The object of this invention is to construct an improved saw, which can be used in positions where it is inconvenient to get in the hand of the user,—say close to a skirting,—or in the case of a plug driven in the wall, and which requires to be cut off flush with the wall, or in similar positions where the space for the hand is limited. The handle of the saw is made with a hinged joint, which can be turned in any position, and fixed there by a bolt. Sometimes the blade of the saw is hinged for a similar purpose.

6,283, Bricks, &c. A. Murray.

With the object of giving to bricks, mouldings, &c., a sharply-defined edge, a thin shaving of clay is proposed by this invention to be taken off after the goods are dried. It is also claimed that the process improves the colour of the bricks.

NEW APPLICATIONS FOR PATENTS.

July 8.—9,618, S. Washington, Compound for Painting or Varnishing Ironwork.—9,622, J. Jones, Concrete Pavements, Floors, &c.—9,627, F. Pilkington, Fireproofing Columns, Stanchions, Girders, Ceilings, Walls, Floors, &c.—9,635, J. Lindley, Thumb Door Latches.

July 9.—9,666, W. and N. Haigh, Flooring Cramp.

July 11.—9,694, F. Stokes, Manufacture and Burning of Cement.—9,695, W. Wise, Windows.—9,716, J. Hirschfeld, Fastenings for Doors.

July 12.—9,757, J. Turner, Explosive Alarm for the Protection of Doors, Windows, &c.—9,759, W. Preston, Water-tap.—9,783, A. Bayer and C. Mott, Cramp for Flooring and other Woodwork.—9,800, A. Boult, Window-fasteners.—9,817, O. Imray, Material for Covering Walls, &c.

July 13.—9,846, P. Bishop, Fastening Window-sashes.

July 14.—9,888, J. Savage, Fastening Window-sashes, Casements, and Doors.—9,908, H. Henry, Cowl or Chimney-cap.

PROVISIONAL SPECIFICATIONS ACCEPTED.

7,571, J. Tuckett and G. Foster, Mortise Lock.—8,563, W. Bradley and Others, Floor Cramp, Lifting Jack, &c.—8,755, E. Emanuel, Flushing and Trapping Overflows to Water-closets.—9,039, F. Naumann, Faced Bricks.—9,140, S. Hazelaed, Wood Planing Machines.—8,266, W. Cliff and B. Peto, Brick or Building Block.—9,034, R. Whiston, Combined Sash Lift and Automatic Sash Fastener.—9,036, W. Dennison, Water Waste Preventing Cisterns.—9,452, W. Goulten, Sliding Window Sashes.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

11,289, T. Elsley, Attaching Door Knobs to Spindles.—11,502, G. and S. Jennings, Water-closets.—11,809, W. Wright, Regulating Water Waste Preventer.—14,837, H. Bromhead, Skylight or Fanlight Opener.—479, J. Shaw, Gullies and Sinks.—8,028, C. Webb, Automatic Dry Closet.—8,383, B. Reull, Plates or Panels for Decorative Purposes.—11,542, B. Ludwig, Decoration of Wood, &c.—12,099, E. Gillis, Ventilator for Rooms fitted with Sash Windows.—3,445, G. Goodhue, Timber Structures for Mines.—7,251, H. Lake, Fastener for Window Sashes, Casements, &c.—8,559, H. Lake, Opening and Closing Windows.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

JULY 11.

By WALKER & RUNTZ (by Tender).

Old Kent-road—Peckham Birkbeck Schools, area 64,800 ft. freehold £4,500

JULY 12.

By J. WILSON.

Notting-hill—6 to 9, Bolton-mews, 56 years, ground-rent 16*l.* 450

By NORMAN & SON.

Euston-road—12, Mabledon-place, 19 years, ground-rent 25*l.* 60

By CHINNOCK, GALSWORTHY, & Co.

Putney-hill—The Grange, 78 years, ground-rent 37*l.* 2,750

North Kensington—105, Wornington-road, 88 years ground-rent 7*l.* 10s. 275

138 to 142, Wornington-road, 89 years, ground-rent 15*l.* 560

Notting-hill—92 and 94, Bramley-road, and 23 to 31 odd, Blechynden-road, 77 years, ground-rent 40*l.* 500

By A. RICHARDS.

Tottenham, Northumberland Park—The Limes, freehold 740

By E. RICHARDS & Co.

Wandsworth-common, St. James's-road—Hampton Villa, freehold 1,030

By DEBENHAM, TEWSON, & Co.

Bethnal-green—Freehold ground-rent of 90*l.* a year, reversion in 8 years 5,000

By P. D. TUCKETT.

Chester-square—104, Ebury-street and stabling, 35 years, ground-rent 12*l.* 2,550

By H. RUTLEY.

Hampstead-road—12, Rutland-street, 39 years, ground-rent 5*l.* 5s. 670

Regent's Park—3, Albert-street, 39 years, ground-rent 4*l.* 10s. 525

Sudbury, Llanover-road—Montague Cottage, freehold 385

Six plots of freehold land 170

JULY 13.

By R. A. NOTLEY.

Mile End—73 and 75, Harford-street, 21 years, ground-rent 5*l.* 280

By M. MILES.

Holborn—The Red Lion and Ball public-house, freehold ..... 3,(70

By W. R. SMITH.

Drury-lane—23, Macklin-street, freehold 4,970

By HODSON, RICHARDS, & Co.

Dalston—171, Queen's-road, 33 years, ground-rent 4*l.* 10s. 305

Hackney—Improved ground-rent of 22*l.*, term 5 years 65

Brixton-hill—An improved ground-rent of 17*l.* 1s., term 4 years ..... 40)

By W. HALL.

North Kensington—112, Wornington-road, 87 years, ground-rent, 7*l.* 10s. 200

Ealing—6, Oxford-road, 76 years, ground-rent 7*l.* 350

16, Oxford-road, 76 years, ground-rent 7*l.* 350

JULY 14.

By F. STOCKER.

Lewisham—29, Wisteria-road, 80 years, ground-rent 4*l.* 230

By BRADEL & Co.

Enfield—The residence, Fir Tree House, and 2a. 3r. 32p., freehold 2,800

Silver-street—A plot of freehold land 370

Churchbury-lane—A block of freehold land, 2a. 2r. 26p. 1,000

Silver-street—Detached freehold residence 1,000

By DEBENHAM, TEWSON, & Co.

Hoxton—The Unicorn public-house, and 1 to 6, Land of Promise, freehold 2,660

By C. C. & T. MOORE.

Mile End—16, Hawkins-street, 13 years, ground-rent 2*l.* 8s. 115

Poplar—4 and 6, Pennyfields, and 61 and 63, West India Dock-road, 9 years, ground-rent 31*l.* 10s. 125

61 and 63, Pennyfields, copyhold 255

Woodford Wells, Mornington-road—A plot of copyhold land 220

By FAREBROTHER, ELLIS, & Co.

Stanmore, Middlesex—The mansion called Canons, the residences, North Lodge and South Lodge, in all 464a. 1r. 4p. 40,000

A plot of freehold land, 0a. 2r. 14p. 165

Stone Grove House, Stone Grove Lodge, and Stone Grove Cottage, freehold £3,540

Ground-rent of 7*l.*, reversion in 35 years 500

Strand—No. 265, Carr's Tavern, freehold 3,900

Paddington—57, Cambridge-street, 30 years, ground-rent 12*l.* 12s., with short reversion 900

Strand—No. 285, Angel and Sun public-house, 3 years, ground-rent 16*l.* 8s. 6d. 200

By E. STIMSON.

New Cross-road—Nos. 189 and 191, Edward-street West, 70 years, ground-rent 19*l.*; and a ground-rent of 9*l.* 10s., same term 430

Lewisham—10, 11, and 15, Jerrard-street, 75 years ground-rent 7*l.* 10s. 750

Peckham—1, 2, and 3, Alfred-place, freehold 210

Camberwell—141, Grove-lane, 36 years, ground-rent 18*l.* 10s. 110

By ELLIS & SON.

Islington—20, Theberton-street, 31 years, ground-rent 8*l.* 405

By D. WATNEY & SONS.

Wandsworth—33, West-hill, freehold 1,060

4, 6, and 8, Putney Bridge-road, 20 years, ground-rent 5*l.* 285

1 and 2, Adelaide-cottages, 50 years, ground-rent 4*l.* 200

Crawley, Sussex—The residence called Deerswood, and 32a. 2r. 27p., freehold 3,650

Freehold cottage, and 5a. 3r. 28p. 600

An Enclosure of freehold land, 5a. 3r. 31p. 205

By DYER, SON, & HILTON (on the Premises).

Blackheath—62, Vanbrugh Park, 74 years, ground-rent 8*l.* 3s. 600

JULY 15.

By MURRELL & SCORELL.

Gray's Inn-road—Nos. 69 and 71, and 6 and 7, North Mews, freehold 3,540

Homerton—No. 2, St. John's Church-road, freehold 445

21, College-avenue, freehold 345

By R. REID.

Oxford-street, 51, Castle-street, 33 years, ground-rent 50*l.* 500

Regent's Park—31, Upper Baker-street, 14 years, ground-rent 6*l.* 6s. 560

An improved ground-rent of 25*l.* 4s., term 14 years 220

By C. R. CROSS.

Uxbridge-road—1 to 5, Blomfield-pavement, 98 years, ground-rent 70*l.* 3,845

Shepherd's Bush-road—No. 8, freehold 570

By BAKER & SONS.

Kentish Town—Six freehold houses called Bellina Villa 3,900

Kensington, Edwardes-terrace—Profit rentals of 363*l.* 8s., term 23 years 4,160

Ealing—The freehold residence Castlebar Court, and 4a. 1r. 39p. 2,210

By W. & F. HOUGHTON.

Stoke Newington—100, Farleigh-road, 77 years, ground-rent 8*l.* 545

Walthamstow, Granville-road—Yew Villa, freehold 210

The Copeland Arms beerhouse, freehold 970

Grove-road—Two plots of freehold land 180

Leyton—1 to 6, Capworth-villas, freehold 1,000

Beaumont-road—Two freehold houses and plot of land 310

7, High-street, freehold 300

Manor Park—1, 4, and 5, Carlyle-terrace, freehold 750

MEETINGS.

TUESDAY, JULY 26.

Glasgow Architectural Association.—Visit to the Commercial Bank, Buchanan-street. 5·15 p.m.

SATURDAY, JULY 30.

Architectural Association.—Visit to Streatham Churches. (See Advt. on p. xiv.)

Liverpool Engineering Society.—Visit to the Forth Bridge Works, at Queensferry. Train from Lime-street Station, Liverpool, at 2 p.m.

Miscellanea.

Liverpool Engineering Society. — On Saturday last the members of this Society visited the Park Extension of the Mersey Railway, the Wirral Railway Works, and the Bidston Observatory. Arriving at Birkenhead at about 2·15 p.m., the party were met by Mr. E. S. Wilcox, the resident engineer of the Mersey Railway, who conducted them by way of Market-street and Beckwith-street to the site of the New Park Station, pointing out on the way the damage sustained by subsidence to the buildings along the route of the tunnel. From the Park Station the party proceeded to inspect the work underground, after which, under the guidance of Mr. R. Freebirne, the Wirral Railway Works were examined, much interest being taken in the working of the "steam navvy" in the cutting. The members having visited the railway works then proceeded to the Observatory at Bidston, when Mr. Hartnup gave an interesting description of the various instruments for obtaining the daily records of the atmospheric changes, and also exhibited diagrams showing the wind pressures and barometric changes experienced during some of the more severe storms that had visited the district.

Lifts.—We have received a letter from Messrs. Archibald Smith & Stevens in reply to Mr. Gibson's last letter, but cannot spare space to continue the discussion.

Opening of New Public Baths at Balham.—The extensive building operations and consequent increase of population at Balham during the last three or four years has led to the erection of new public baths, which were formally opened on Thursday. The site of the baths is on the east side of the Balham main high road, not far from the London and Brighton railway station. The building has a frontage 43 ft. in length, with a depth of 240 ft., the structure thus covering a ground area of about 10,400 ft. The elevation is 50 ft. in height, and contains four floors, having an arched central entrance 10 ft. in width, leading to the private and swimming baths in the rear. Those portions of the ground-floor on each side of the central entrance are intended to be let off as shops. The frontage is faced with red Suffolk brick, the windows of the several floors having red gauged brick arches. Immediately over the central entrance to the baths there is an ornamental oriel window at the first floor. The walls of the entrance are faced with enamelled brick in varied colours, and the floor is laid with encaustic tiles. About midway along the entrance corridor, on each side, are the men's and women's private baths and dressing-rooms, and beyond these is the public swimming-bath, 100 ft. in length, and 30 ft. in width, with platforms on each side, and upwards of forty dressing-boxes. The walls of the bath, which is 6 ft. in depth at one end, and 3 ft. 6 in. at the opposite end, are faced with white enamelled brick. At the extreme rear is a boiler-house and laundry, in connexion with the baths. The roof of the swimming bath, which has a lantern light, rests on ornamental iron girders. During the winter months the swimming bath is intended to be utilised as a public hall, for meetings, lectures, and entertainments of a miscellaneous character. Mr. J. Dickeson, of Battersea, is the architect, and the building has been erected by the owner's workmen, under the superintendence of Mr. Alfred Wallis, as foreman.

Composition of Antique Metals.—The well-known Paris chemist, M. Berthelot, has recently made some discoveries on the above subject, which are considered to have both scientific and historical importance. M. Place discovered in 1854, under the ruins of the palace of King Sargon, a stone coffer containing several metal plates covered with cuneiform inscriptions, recording the erection of the building (B.C. 760); the fact being likewise recorded that three of the tablets were respectively of gold, silver, and copper, while the fourth was composed of various substances. M. Berthelot's researches (described in the *Illustrirte Zeitung für Blech Industrie*) confirm the correctness of the inscriptions as to the first two plates, but the third he found to be bronze instead of copper, containing 85 parts of copper to 10 of tin. The fourth plate was found to consist of crystallised magnesian limestone (carbonate of magnesium), a very rare mineral, unknown to scientific men at the commencement of the present century. Some fragments from Tello were likewise analysed by M. Berthelot, with the result that a vase was found to be composed of pure antimony, which metal has always been regarded as unknown to the ancients and as having been discovered only in the fifteenth century. Tello has been deserted since the time of the Parthians, so that the remains of the oldest Chaldean culture are found there. Virchow has also recorded the discovery of antimony ornaments in a Trans-Caucasian necropolis. A statuette was found by M. Berthelot to be of pure copper.

Sale of Property.—The sale of Canons, in Middlesex, described in our columns of June 25 last, was effected at the Mart on Thursday last. Sir J. W. Ellis was auctioneer. The house and grounds of about 460 acres were bought for 40,000*l.* Other lots of 65 acres and 38 acres were sold for 7,000*l.* and 5,400*l.* respectively. The whole nine lots, comprising all the estate, realised 55,330*l.*

The Tay and Forth Bridges.—Referring to the account given in our last (p. 116) of the Tay Bridge, Mr. Joseph Hamblet, of West Bromwich, writes to say that the blue bricks mentioned were supplied by him, and also that he is now supplying all that are being used in the construction of the Forth Bridge.

Total Destruction by Fire of a Swedish Town.—The town of Luleå, in the North of Sweden, was recently entirely destroyed by fire. The church, the Town-hall, as well as other public buildings, were burnt down.

PRICES CURRENT OF MATERIALS.

TIMBER.	£. s. d.	£. s. d.
Greenheart, B.G. ....ton	5 10 0	7 10 0
Teak, E.I. ....load	8 0 0	12 0 0
Sequois, U.S. ....foot cube	0 2 3	0 3 0
Ash, Canada ....load	3 0 0	4 10 0
Birch ,, ...load	2 0 0	3 10 0
Elm ,, ...load	3 10 0	4 10 0
Fir, Dantsic, &c. ....load	1 10 0	4 0 0
Oak ,, ...load	2 10 0	4 10 0
Canada ....load	3 0 0	8 0 0
Pine, Canada red ....load	2 0 0	3 10 0
,, yellow ....load	2 10 0	4 10 0
Lath, Dantsic ....fathom	3 0 0	5 0 0
St. Petersburg ....fathom	4 0 0	5 10 0
Wainscot, Riga ....log	0 0 0	0 0 0
,, Odessa, crown ....log	2 10 0	3 0 0
Deals, Finland, 2nd and 1st...std.100	7 0 0	8 0 0
,, 4th and 3rd std.100	5 10 0	6 10 0
Riga std.100	5 10 0	7 0 0
St. Petersburg, 1st yellow std.100	8 0 0	13 0 0
,, 2nd ,, ...std.100	7 0 0	8 0 0
,, white std.100	6 10 0	8 10 0
Swedish std.100	0 0 0	0 0 0
White Sea std.100	7 0 0	16 0 0
Canada, Pine, 1st std.100	16 0 0	24 0 0
,, ,, 2nd std.100	10 0 0	15 0 0
,, ,, 3rd, &c. std.100	6 0 0	9 0 0
,, Spruce, 1st std.100	8 0 0	9 0 0
,, ,, 3rd and 2nd std.100	5 0 0	7 0 0
New Brunswick, &c. std.100	5 0 0	8 10 0
Battens, all kinds std.100	4 0 0	10 10 0
Flooring Boards, sq., 1 in., prepared, First ....sq.	0 8 0	0 11 0
Second ....sq.	0 6 8	0 7 6
Other qualities ....sq.	0 4 0	0 6 0
Cedar, Cuba ....foot	0 0 3½	0 0 3½
Honduras, &c. ....foot	0 0 3	0 0 3½
Australian ....foot	0 0 2	0 0 3
Mahogany, Cuba ....foot	0 0 4	0 0 7
St. Domingo, cargo average ....foot	0 0 4	0 0 6
Mahogany, Mexican, cargo av. ....foot	0 0 3½	0 0 4
Tobasco ,, ...foot	0 0 4	0 0 5½
Honduras ,, ...foot	0 0 3½	0 0 5½
Maple, Bird's-eye ....foot	0 0 5	0 0 7
Rose, Rio ....ton	8 0 0	11 0 0
Bahia ....ton	7 0 0	9 0 0

TIMBER (*continued*).	£. s. d.	£. s. d.
Box, Turkey ....ton	5 0 0	12 0 0
Satin, St. Domingo ....foot	0 0 5	0 0 9
Porto Rico ....foot	0 0 6	0 0 10
Walnut, Italian ....foot	0 0 3½	0 0 5½
METALS.		
IRON—Bar, Welsh, in London...ton	4 7 6	4 15 0
,, in Wales ....ton	4 2 6	4 7 6
,, Staffordshire, London ....ton	5 10 0	6 0 0
Sheets, single, in London ....ton	6 15 0	8 10 0
Hoops ,, ...ton	6 0 0	7 0 0
Nail-rods ,, ...ton	5 15 0	6 10 0
COPPER—		
British, cake and ingot ....ton	43 0 0	44 0 0
Best selected ....ton	44 10 0	45 0 0
Sheets, strong ....ton	50 0 0	0 0 0
Chili, bars ....ton	39 15 0	40 2 6
YELLOW METAL ....lb.	0 0 0	0 0 0
LEAD—		
Pig, Spanish ....ton	11 16 3	0 0 0
English, common brands ....ton	12 0 0	0 0 0
Sheet, English ....ton	13 1 3	13 6 3
SPELTER—		
Silesian, special ....ton	14 12 6	14 15 0
Ordinary brands ....ton	14 10 0	14 12 6
TIN—		
Straits ....ton	103 17 6	0 0 0
Australian ....ton	104 10 0	0 0 0
English ingots ....ton	107 0 0	0 0 0
ZINC—		
English sheet ....ton	0 0 0	0 0 0
OILS.		
Linseed ....ton	21 7 6	22 12 6
Cocoanut, Cochin ....ton	30 0 0	33 0 0
Ceylon ....ton	24 0 0	0 0 0
Palm, Lagos ....ton	21 0 0	0 0 0
Rapeseed, English pale ....ton	23 10 0	0 0 0
,, brown ....ton	22 0 0	0 0 0
Cottonseed, refined ....ton	21 0 0	21 10 0
Tallow and Oleine ....ton	25 0 0	45 0 0
Lubricating, U.S. ....gal.	5 0 0	6 0 0
,, refined ....gal.	5 0 0	13 0 0
TURPENTINE—		
American, in casks ....cwt.	1 6 0	0 0 0
TAR—		
Stockholm ....barrel	0 14 0	0 14 6
Archangel ....barrel	0 9 6	0 10 0

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Laying-out Property, Isle of Man	....	35*l.* and 15*l.*	Not stated ...	ii.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Detached Infirmary, Llandaff	Drapers' Company	C. Reilly	July 25th	ii.
Thames Ballast, Sand, and Cement	Paddington Vestry	*Official*	July 27th	ii.
Wooden Blocks for Paving	do.	do.	do.	ii.
Painting, Alterations, &c.	Wndswrth & Clapham Un	do.	do.	ii.
Painting Works	Brighton Town Council	P. C. Lockwood	July 28th	ii.
Construction of Railways (Beeston to Batley)	Great Northern Ry. Co.	J. Fraser & Sons	July 29th	ii.
Alterations to London Bridge Station	L. B. & S. C. Ry. Co....	F. D. Banister	July 30th	ix.
Enlargement of Parcel P. O., Exeter	Com. of H.M. Works...	*Official*	August 2nd	ix.
Kerbing, Draining, and Making-up Lane	Leyton Local Board ...	W. Dawson	do.	ix.
Public Offices, Free Library, &c.	Darlaston U. S. A.	J. A. Cossins	do.	ii.
Tarpaving, Kerbing, and Channelling	Southend Local Board...	F. H. Tulloch	do.	ix.
Making and Sewering Road	Bromley U. S. A.	*Official*	do.	ii.
Paving Footways, &c.	Greenwich Bd. of Wks.	do.	August 3rd	ix.
York Paving Stone	do.	do.	do.	ix.
Alterations to Mortuary	Met. Asylums Board ...	A. & C. Harston	August 8th	ii.
Sea Water Works, Storm Outfall, &c.	Bournemouth Comsnrs	G. R. Andrews	do.	ii.
Construction of Railway, Tetbury	Great Western Ry. Co.	*Official*	August 9th	ix.
Sewerage Works	E. Grinstead Local Bd.	E. S. Gordon	August 15th	ii.
Cast-Iron Water Mains, Sluice Valves, &c. ...	Wakefield U. R. S. A.	A. Fawcett	August 22nd	ii.
Dining-Hall, &c.	Guardians, St. Matthew, Bethnal Green	A. & C. Harston	August 23rd	ix.
Painting, Limewhiting, &c., Birmingham	War Department	*Official*	Not stated...	ix.
Public Hall, Isleworth	....	S. Woodbridge, Junior	do.	ix.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
District Surveyor, Plumstead	Met. Board of Works...	Not stated	July 27th	xiv.

TENDERS

ABERTILLERY.—For alterations to Commercial Inn, Abertillery. Mr. T. Clarkson Wakeling, architect, Merthyr :—

T. Foster, Abergavenny	£176 0 0
W. Smith, Abertillery	144 4 0
J. Williams, Merthyr (accepted)	128 0 0
E. Miles, Aberbeeg	95 0 0

BETHNAL-GREEN.—For pointing chimneys and repairs to roof, Bethnal-green Workhouse. Messrs. Thos. and Wm. Stone, architects, 2, Great Winchester-street :—

Steel Bros.	£235 0 0
Thomerson	205 0 0
Dabbs	198 0 0
Salt	180 0 0
Knight	143 10 0
Edwards (accepted)	135 0 0

BEDFORD.—For building new school-room and removing old gallery (less allowance for old materials), for the Baptist Chapel, Mill-street, Bedford. Mr. F. T. Mercer, architect, Bedford :—

Laughton	£562 18 10
Warton & Walker	552 14 4
Coleman & Fathers	544 0 0
Whiting	543 0 0
Harrison	540 10 0
Potter	529 5 0
White	494 0 0
Warwick & Osborn	485 5 0
Melcombe Bros.	462 16 6

BURSLEM.—For re-slating roof and general repairs to floors at the Burslem Parish Church Schools :—

W. Cooke	£141 0 0
A. Hall	136 0 0
W. Bennett	136 0 0
G. C. Dann	120 18 0
G. & J. W. Carter (accepted)	112 0 0
A. Ward	110 0 0

CHELSEA. — For painting and other works at the Chelsea Infirmary, for the Guardians of Chelsea. Messrs. A. & C. Harston, architects, 15, Leadenhall-street. Quantities not supplied:—

H. J. Ball & Co.	£738	0	0!
W. F. Croxford	644	2	6
Woolford & Son	573	6	0
R. Bryon	485	0	0
W. Eades	425	0	0
A. W. Derby	373	0	0
R. Proctor	350	0	0
W. Wythe	335	10	0
Newton & Idle, The Chase, Clapham (accepted)	279	0	0!

CROYDON. — For alterations and additions to Oak Hyrst, Park Hill-rise. Mr. T. Heygate Vernon, architect, No. 21, Abingdon-street, Westminster:—

E. Costar, Croydon	£250	0	0
E. Triggs, Clapham	248	0	0
H. Inch, Addiscombe	235	0	0
Smith & Bulled, Croydon	229	0	0
Maides & Harper, Croydon	223	0	0

DOWLAIS.—For erecting shop and house for Mr. Schonart, Dowlais. Mr. T. Clarkson Wakeling, architect, Merthyr:—

R. Lloyd, Cefn, near Merthyr	£390	0	0
E. Jones, Dowlais	379	0	0
E. Lumley, Castle-street, Merthyr	305	0	0
J. Jones, Merthyr (accepted)	289	0	0

EARLSFIELD.—For the erection of a house in the Earlsfield-road, Earlsfield, for Mr. Coulson Laceby. Mr. Charles Jones, architect, 151, Ebury-street, S.W.:—

H. Brown, Earlsfield	£625	0	0
G. N. Street, Battersea (accepted)	480	0	0

EASTBOURNE.—For the erection of new Infirmary at Eastbourne. Mr. Fredk. G. Cooke, A.-M.I.C.E., architect, Trinity-chambers, Eastbourne. Quantities by Mr. C. Stanger, 21, Finsbury-pavement, London:—

Faulkner, London	£7,496	0	0
J. T. Chappell, London	7,348	0	0
J. Peerless, Eastbourne	7,129	0	0
Robson, Sharesbrook	6,749	0	0
Cornfort, Northiam	6,732	0	0
J. Longley, Crawley	6,651	0	0
E. Cornwell & Son, Eastbourne	6,600	0	0
Peters, Horsham	6,595	0	0
Holloway, Deptford	6,580	0	0
Newman & Hart, Eastbourne	6,505	10	8
M. Martin, Eastbourne	6,425	0	0
C. Tomkinson, Eastbourne	6,375	0	0
J. Wood, Eastbourne	6,234	0	0
Dore & Sons, Eastbourne	6,123	0	0
J. Martin, Eastbourne (accepted)	5,982	0	0

EASTBOURNE.—For additions to house, St. Leonard's-road, for Mr. J. Bedford Foster. Mr. Fredk. G. Cooke, architect, Eastbourne:—

Dore & Sons	£420	0	0
M. Martin	394	10	0
E. Cornwell	357	7	6
Backhurst	297	15	8

EXNING (Suffolk). — For re-pewing part of St. Martin's Church, Exning, Suffolk. Mr. John Flatman, architect, Newmarket:—

Simpson & Son	£295	0	0
Smith	285	0	0
Linzell	260	0	0
Hunt & Blyth	248	10	0
Saint & Son	227	0	0
Kerridge & Shaw	185	0	0
Hook & Tebbitt	175	10	0
Cowell & Son (accepted)	135	0	0

FINSBURY. — For enclosing, levelling, draining, and tar-paving additional land, for playgrounds at Blundell-street School, for the School Board for London. Mr. T. J. Bailey, architect:—

Cowley & Drake	£445	0	0
G. S. Pritchard & Son	403	0	0
T. Bendon*	340	0	0

* Recommended by the Works Committee for acceptance.

HAMMERSMITH.—For fittings, London and South Western Bank, Hammersmith. Messrs. Thos. and Wm. Stone, architects, 2, Great Winchester-street:—

Bryan, Norwood	£628	0	0
Bright	464	15	0
Gregar (accepted)	437	0	0

HAMPSTEAD.—For building villa residence and conservatory in Pattison-road, West Hampstead, for Mr. F. F. Mathieson. Mr. G. H. Greatbach, architect, 51, Moorgate-street:—

	House.	Conservatory.
Nightingale	£1,686	£66 0 0
L. H. & R. Roberts	1,573	66 0 0
Mattock Bros.	1,555	64 0 0
J. Grover & Sons*	1,544	54 0 0

* Accepted.

HAMPSTEAD.—For making new road, constructing sewer, gullies, &c., for the Agincourt Park Estate. Mr. E. G. Salter, architect and surveyor, 166, Ossulston-street:—

C. Killingback, Camden-road (accepted)	£1,050	0	0

HIGHAM (Essex).—For the erection of a cottage for Mr. Thomas S. Furniss. Mr. W. H. Atkin Berry, 35, Bedford-row, architect:—

Saunders & Son, Dedham (accepted)	£365	0	0

HORNSEY.—For works in connexion with new roads, for the Hornsey Local Board. Mr. T. de Courcy Meade, engineer and surveyor:—

	Weston Park (Western Portion).	Birchington-road (Southern Portion).
Trickett & Son, Millbank	£1,970 0 0	£422 0 0
Pizzey, Hornsey	1,728 0 0	400 0 0
Adams, Finsbury	1,726 0 0	398 0 0
Bloomfield, Tottenham	1,699 0 0	453 0 0
Dunmore, Crouch End	1,672 0 0	439 0 0
Mowlem & Co., Westminster	1,696 0 0*	394 0 0*

* Accepted.

ILFORD.—For building a dwelling-house, stabling, and cow-shed, &c., for Mr. J. T. G. Price. Mr. P. Watkins, architect:—

Scrivener & Co.	£1,585	0	0
Holmes & Sons	1,265	9	0
W. Watson*	1,245	0	0
C. Barnes	1,194	0	0

* Accepted in part, for stabling and cow-shed, &c.

ILFORD.—For building a dwelling-house in Barking-lane, for Mr. A. Rawkins. Mr. P. Watkins, architect:—

W. Watson	£565	0	0
H. Dyer & Sons (accepted)	417	0	0
J. Bassett	350	0	0

KEW-GREEN (Surrey). — For new Queen's Schools and offices, Kew-green, Surrey, for the Rev. W. H. Bliss, M.A., and Committee. Mr. Edwin Dolby, architect. Quantities supplied by Mr. T. Marcus Houghton, Imperial-buildings, Ludgate-circus:—

Shillitoe & Son, Bury St. Edmunds	£3,650	0	0
Staines & Son	2,994	0	0
W. Rhodes	2,860	0	0
Newton & Idle	2,843	0	0
Kirk Bros.	2,780	0	0
H. Knight	2,745	0	0
Gould & Brand	2,740	0	0
Killby & Gayford	2,736	0	0
Flew & Co.	2,730	0	0
D. Brown & Co.	2,690	0	0
Oldrey & Co.	2,667	0	0
Howell & Son	2,646	0	0
B. E. Blasby	2,640	0	0
F. & H. F. Higgs	2,580	0	0
Pusey & Lumley (withdrawn) *	2,270	0	0

* Error in cast, should have been 2,735*l*.

LAMBETH.—For the enlargement of the Shillington-street School (West Lambeth BH), by 400 places, for the School Board for London. Mr. T. J. Bailey, architect:—

King Bros. & Co.	£6,049	0	0
W. Oldrey & Co.	5,311	0	0
J. Holloway	5,084	0	0
C. Wall	5,045	0	0
H. L. Holloway	5,045	0	0
W. Johnson	5,030	0	0
Stimpson & Co.*	4,994	0	0

* Recommended by the Works Committee for acceptance.

LONDON. — For alterations and additions to the Tankard public-house, Kensington-road, for Mr. German. Messrs. Furniss & Thorpe, architects:—

Spencer & Co.	£3650	0	0
Manby	3,594	0	0
Mills	3,560	0	0
Scrivener & Co.	3,529	0	0
Burman & Son	3,493	0	0
Voller	3,479	0	0
Gould & Brand	3,389	0	0
Anley	3,297	0	0
Joans	3,209	0	0
J. Beale (accepted)	2,900	0	0

LONDON. — For additions to billiard-room for the Committee of the Constitutional Club, West Norwood. Mr. J. Watt, A.R.I.B.A., architect, 19, York-buildings, Adelphi, W.C. Quantities supplied by Messrs. T. Marcus Houghton and Robert Henry Kerr, Imperial-buildings, Ludgate-circus, E.C.:—

Watson	£598	0	0
Pusey & Lumley	552	0	0
Deacon & Co.	520	0	0
Hitchcock, Gipsy-hill, S.E.*	495	0	0

* Accepted, subject to a reduction.

LONDON.—For pewterer's work at the St. John's Tavern, Junction-road, Upper Holloway, for Mr. L. Ascott. Mr. H. J. Newton, architect, 17, Queen Anne's-gate, Westminster:—

Edwards	£114	0	0
Saunders & Son	108	0	0
Hellings	97	10	0
Heath (accepted)	97	0	0
For Gasfitter's Work.			
Winn (accepted)	150	0	0

LONDON. — For alteration of business premises in Walworth-road, for Mr. Litchfield Binckes:—

Kennard Bros., Lewisham (accepted)	£700	0	0

LONDON.—For pulling down and rebuilding Long's Hotel, Bond-street and Clifford-street, W., for Mr. E. Leibl. The building to be completed by May 1st, 1888. Mr. W. G. Bartlett, architect. Quantities by Messrs. Stonor & Sons:—

	£	A* £	B* £	C* £
Stimpson & Co.	31,984	—	—	—
S. G. Bird	31,786	—	—	—
Colls & Sons	31,642	—	—	—
	4 weeks			
Wall Bros.	31,350	500	431	1,327
Chappell	31,159	—	—	—
Higgs & Hill	29,990	—	250	1,000
Manley	29,327	—	400	750
Nightingale	28,946	—	150	628
Conder	28,865	—	200	300
Simpson & Sons	28,120	—	—	—
Boyce	27,640	—	140	250
Holland & Hannen	2,7681	—	150	295
Peto Bros.	27,498	—	—	—
Bywaters	27,356	—	200	556
Patman & Fotheringham	26,943	4 weeks 900	150	400
Green & Lee	26,691	4 weeks 500	150	430
Kirk & Randall	26,440	6 weeks 600	358	612

A* Add if executed in less time.
B* Deduct brickwork in mortar in lieu of cement.
C* Deduct if plastering is executed in lime and hair in lieu of cement.

LONDON.—For new story to No. 11, Upper Brook-street, Park-lane (Grosvenor Estate). Mr. Mark H. Judge, architect, 8, Park Place-villas, W.:—

	A.	B.
Parkinson & Sons	£474	£457
H. Salter Stephens	447	432
W. King & Son (accepted)	411	398

LUTON.—For alterations and additions to premises in Upper George-street, for Mr. C. Dillingham. Mr. W. J. Pearson, architect, Market-hill, Luton:—

Parkins	£385	0	0
Dunham	375	0	0
Wright	339	0	0
Slough Bros.	322	0	0
Long	290	10	0
Ford (accepted)	290	0	0
Sinfield (too late)	283	0	0

[All of Luton].

MERTHYR. — For erecting the Merthyr General Hospital. Mr. T. Clarkson Wakeling, architect, Merthyr. Quantities supplied by the architect:—

E. Morgan, Tredegar	£5,101	7	7!
Morgan & Evans, Pontypool	4,918	10	0
D. C. Jones & Co., Gloucester	4,502	0	0
T. Foster, Abergavenny	4,425	0	0
T. Rees, Merthyr Vale	4,340	1	11
J. Williams, Knighton	4,202	1	0
C. Burton, Cardiff	4,160	14	5
T. Walkin & Jenkins, Swansea	4,074	2	6
Shepard & Son, Cardiff	3,787	13	6
Stephens & Bastow, Bristol	3,741	0	0
E. Thomas, Neath	3,524	15	0
Turner & Sons, Cardiff	3,444	2	4
D. Jenkins, Merthyr	3,380	0	0
J. Williams, Castle-street, Merthyr	3,330	8	0
J. Jones, Glynant, Merthyr	3,328	10	0
W. Bowers & Co., Hereford*	3,289	2	6
J. Gabe, Merthyr	2,807	3	0!

* Accepted.

MILLWALL. — For the erection of new Wesleyan Chapel and School-room, &c., at the corner of Alpha-road and Charles-street, for the Trustees. Mr. James F. Wesley, architect, 277, Romford-road, Forest-gate:—

J. H. Johnson	£1,627	0	0
J. Curnow	1,617	0	0
J. Holland	1,499	0	0
F. Walker	1,483	0	0
J. Walker	1,396	0	0
G. Limn (accepted)	1,350	0	0

NEWMARKET. — For new house and shop for Mr. Peachy, Newmarket. Mr. Jno. Flatman, architect, Newmarket:—

Blyth & Hunt	£910	0	0
Cowell & Son	900	0	0
Kidman	889	0	0
Hook & Tebbitt	853	0	0
Linzell (accepted)	836	0	0

NORBITON.—For the erection of additional stabling, for Messrs. Carter, Paterson, & Co., under the superintendence of Mr. William Eve, 10, Union-court, Old Broad-street, E.C.:—

Johnson	£719	0	0
Godfrey	694	0	0
Stubbs	664	0	0
Page	655	0	0
Holland	650	0	0
Harris & Wardrop	624	0	0
Dobbs	619	0	0
F. & F. H. Higgs, Station Works, Loughborough Junction (accepted)	598	0	0

PADDINGTON. — For the erection of laundry and receiving wards at the Workhouse, Harrow-road, for the Guardians of Paddington. Messrs. A. & C. Harston, architects, 15, Leadenhall-street. Quantities supplied:—

J. H. Johnson	£4,880	0	0
H. Ingram	4,312	0	0
D. Brown & Co.	4,300	0	0
W. Johnson	4,150	0	0
Leslie & Knight, No. 31, St. Mary Abbot's-terrace, Kensington-road (accepted)	3,872	0	0

PONTMORLAIS.—For erecting seven shops and houses. Mr. T. Clarkson Wakeling, architect, Merthyr. Quantities by the architect:—

T. Foster, Abergavenny	£2,650	0	0
D. C. Jones, Gloucester	2,384	0	0
I. Davis, Merthyr	2,185	0	0
J. Jones, Glynant, Merthyr	2,175	0	0
J. Williams, Castle-street, Merthyr*	2,075	6	7
W. Bowers & Co., Hereford	2,100	0	0

* Accepted.

RHYMNEY.—For erecting public hall at Rhymney. Mr. T. Clarkson Wakeling, architect, Merthyr:—

T. Rees, Merthyr Vale	£1,375	0	0
D. Davis, Tredegar	1,293	0	0
D. C. Jones, Gloucester	1,243	0	0
T. Edwards, Tredegar	1,200	0	0
T. Foster, Abergavenny	1,165	0	0
R. Lloyd, Cefn, near Merthyr	1,150	0	0
J. Williams, Castle-street, Merthyr (accepted)	1,017	0	0

SEVENOAKS.—For the levelling, kerbing, and channelling of St. John's-road, and for other works, for the Sevenoaks Local Board. Mr. Jabez Mann, Town Surveyor:—

Mowlem & Co., Westminster	£805	3	2
J. Clarke, Thornton Heath	732	8	6
G Osenton, Erith	674	0	0
H. Owen, Sevenoaks*	572	3	0

* Accepted, as per schedule of prices.
[Surveyor's estimate, 638*l*.]

SOUTHWARK.—For erecting a new house for the Schoolkeeper of the Hatfield-street School (Southwark A), and for utilising the space occupied by his present rooms as additional accommodation for 54 infants; and, further, for providing covered playgrounds for the school, for the School Board for London. Mr. T. J. Bailey, architect:—

King Bros. & Co.	£1,185	0	0
J. Mills	1,155	0	0
W. Downs	1,135	0	0
Atherton & Latta	1,118	0	0
W. A. Rhodes	1,043	0	0
Locks & Hooker	1,035	0	0
F. & F. H. Higgs	1,024	0	0
H. L. Holloway	994	0	0
S. J. Jerrard	990	0	0
W. Johnson	970	0	0
J. Holloway*	960	0	0

* Recommended by the Works Committee for acceptance.

SOUTHWARK.—For the erection of a cookery centre on the Galleywall-road site (Southwark AF1), for the School Board for London. Mr. T. J. Bailey, architect :—

J. W. Roy	£454	0	9
H. L. Holloway	393	0	0
W. Johnson*	345	0	0

* Recommended by the Works Committee for acceptance.

STOKE-ON-TRENT.—For erecting two semi-detached cottages at Wolstanton, Stoke-on-Trent, for Mr. A. Boulton :—

W. Grant	£550	0	0
J. Windsor	528	0	0
J. Bowden	480	0	0
W. Cooke (accepted)	434	0	0

STOKE-ON-TRENT.—For erecting six houses at Basford, Stoke-on-Trent, for Mr. W. W. Dobson :—

T. Godwin	£1,100	0	0
W. Cooke	889	0	0
J. J. Longdon (accepted)	875	0	0

STOKE-ON-TRENT.—For additions to the Bowling Green Inn, Bucknall, Stoke-on-Trent :—

T. Godwin	£225	0	0
W. Cooke	197	16	0
J. J. Longdon (accepted)	173	5	0

TREDEGAR.—For the erection of a drill-hall at Tredegar. Mr. T. Clarkson Wakeling, architect :—

W. Leonard, Tredegar	£1,259	0	0
T. Edwards, Tredegar	1,010	0	0
T. Foster, Abergavenny	990	0	0
R. Lloyd, Cefn, near Merthyr	990	0	0
E. Morgan, Tredegar (accepted)	900	0	0
D. Morgan, Tredegar	880	0	0
J. Williams, Merthyr	858	4	6

WALTHAM ABBEY (Essex).—For the erection of a pair of semi-detached villas in the Sewardstone-road, Waltham Abbey, Essex, for Mr. C. H. Colvin. Mr. John Hudson, architect, 80, Leman-street, E. :—

W. Gardener, Waltham Abbey	£1,650	0	0
W. Gladding, Mile End, E.	1,398	0	0
L. & W. D. Patman, Enfield, N.	1,298	0	0
J. Bentley, Waltham Abbey*	1,282	0	0

* Accepted.

, **SPECIAL NOTICE.**—**Lists of Tenders frequently reach us too late for insertion. They should be delivered at our office, 46, Catherine-street, W.C., not later than 12 Noon on THURSDAYS.**

TO CORRESPONDENTS.

Registered Telegraphic Address, "THE BUILDER, LONDON."

C. H.—G. H.—G. W. N. (not within our scope).—W. C.—G. L. J.—J. C. W.—A. B., Oldham (Architects are not permitted to describe their own works as "of exquisite beauty," &c. &c. in anonymous paragraphs forwarded for publication. We are very glad to have descriptions by architects of works carried out by them, but such descriptions must be confined to statements of fact.—T. S.—"Cantab." (no examination is necessary at present).—R. H. R.—W. C. (should have sent amounts).—R. P. (ditto).—C. Sons & Co. (see answer to W. C.—R. C. C. (too late).

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

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Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

PUBLISHER'S NOTICES.

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THE INDEX and TITLE-PAGE for Volume LII. (Jan. to June, 1887) was given as a Supplement with the Number for July 9.

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